

EDUCATION 2.0

CHRONICLES OF TECHNOLOGICAL AND CULTURAL CHANGE IN EGYPT

EDITED BY
LINDA HERRERA



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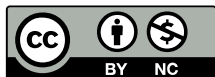
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Educational research is an endeavor that requires collective imagination and comradery. This volume would not have been possible without the trust, generosity, hard work and talent of numerous colleagues, friends, educators, students, and institutions at different stages.

The idea to document and research Egypt's bold Education 2.0 reforms began on 31 August 2018 when I received an email, followed by a phone call a few hours later, from the Minister of Education and Technical Education, Dr. Tarek Shawki. The email read:

Dear Linda,

It has been a long time since we last talked but things around here have progressed significantly as you might know and I really wish we can discuss by phone various issues related to the education transformation in Egypt and your willingness to be a partner in this exciting journey.

Is there a good time to call you very soon? And if so, what number should I contact you on?

Best regards,

Tarek

Tarek Shawki

Minister of Education and Technical Education
Arab Republic of Egypt

Dr. Tarek and I had met for the first time in 2016 at the University of Illinois at Urbana Champaign (UIUC) where he had taught Theoretical and Applied Mechanics from 1986-1999. He was in town visiting his former colleagues and passed by the College of Education to introduce

himself. At the time, he was serving as Chair of the Presidential Council of Education and Scientific Research, and a colleague had told him about me, a scholar of Egyptian education.

As an anthropologist with a record of critical education scholarship, I was not accustomed to getting calls from ministers of education and was cautious. During our long phone conversation, it became clear that we were relating to each other as academics, talking about the need to document an historic educational experiment that was just beginning to unfold. After tossing around different ideas, we agreed that the best way I could contribute to the reform was by establishing an independent project to research and document it with a local team. The goal was to provide opportunities and training to educational researchers while producing evidence about how the reforms were being received on the ground to start a kind of feedback loop. I was also attracted to the idea of chronicling a unique reform in real time and creating an historical record. Dr. Tarek agreed to this overall plan and assured me I would have independence and not have to worry about interference in the research findings, a promise he has kept to the end.

Less than a month later, on 21 Sept 2018, I was in Cairo meeting with the Minister and his two trusted advisors, Deena Boraie and Nelly El Zayat. We engaged in talks with potential donors. Though it is not at all easy to secure donor funding for educational research, we found an ally in Aletheia Bligh Flower, First Secretary for Education, British Embassy Cairo. She initiated steps for financial support from the British Foreign, Commonwealth and Development Office. With a lot of help, we established the 'Education 2.0 Research and Documentation Project' (RDP) in 2019 (Fig. A.1).

I could never have made it through the year-long maze of funding requirements without the assistance of Aly El Sherei and Mohammed Youssef of Dcode Economic & Financial Consulting, Yara Elkoreity, Education Program of the British Embassy Cairo, and Fatima Al-Banna from Coffey. The RDP was housed at the American University in Cairo's (AUC) Social Research Center (SRC). A huge debt of gratitude goes to the SRC director Hoda Rashad who was always generous with her time and advice, and to members of her staff, especially Nashwa Rezk.



Fig. A.1 Education 2.0 Research and Documentation Project Workshop. April 2019, Cairo. From left, Alethia Blithe Flowers, Linda Herrera, Tarek Shawki, Deena Boraie, Nelly ElZayat. Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Education_2.0_Research_and_Documentation_Project_Workshop_in_Cairo,_2019.jpg

Dora Albert and Nevine Torky of the Office of Sponsored Programs oversaw complicated budgets and reporting requirements with tremendous skill and grace. They worked with several counterparts including Amanda Brown at the University of Illinois at Urbana-Champaign who handled my secondment.

We began the project with ambitious plans to conduct case studies in a dozen primary schools in different parts of the country to observe how the new Education 2.0 curriculum and pedagogy were being implemented on the ground. With the backing of the Minister himself, Randa Shaheen very kindly helped with identifying the schools and contacting principals, and the Minister signed off on a detailed plan. However, the Ministry's security office denied permission for this study with the curt explanation, 'No one is going into our schools.' Research is all about making contingency plans, and we pivoted to oral history

research which did not require school visits, and other forms of detailed documentation, from cataloging the Minister's press conferences, collecting grey materials on the reforms, monitoring social media to gauge public opinion and debates, among other activities.

The funding for the project was initially earmarked for three years but was terminated after one year due to the COVID-19 pandemic. For that brief yet productive time, we operated with a dedicated and resourceful team in Cairo that included Nairy AbdElshafy, Oral History Coordinator, Heba Shama, Case Study Coordinator, Hany Zayed, Digital Transformation Coordinator (all of whom have contributions in this volume), Abdelhamid Mahmoud, Poducation Producer, Helen Gabrah, Project Assistant, Dina Mokbel, Project Assistant, Ahmed Sherif and Kamal Nabil, researchers from the National Center For Educational Research and Development (NCERD), and a team of translators that included Ahmed Bakr, Aya ElHusseiny, Sherif Magdy, Huda Mohamed, and Mohamed Said. Mostafa Saber Hanafi served as Video Production Coordinator and Ahmed Alaa worked in Video Production and Archiving (videos are available on the project's YouTube channel at <https://www.youtube.com/@education2-Egypt/videos>) (see Fig. A.2).



Fig. A.2 Zoom meeting of Education 2.0 Research and Documentation Project during the COVID-19 pandemic. Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Zoom_meeting_of_EDU_2.0_Research_and_Documentation_Project_during_Pandemic,_2020.png#/media/File:Zoom_meeting_of_EDU_2.0_Research_and_Documentation_Project_during_Pandemic,_2020.png

After the RDP formally closed, I continued the research, training, and documentation efforts on a more ad hoc and volunteer basis, both online and in-person. I came to know a new group of education researchers, Menna Mansour, Mohamed Yehia, Nevine El Souefi, and Ayman Elhoseini, who expressed interest in engaging in Education 2.0 research. Similarly, Nariman Moustafa and Ebtihal Elghamrawy reached out and got involved with the project remotely while they were master's students at Harvard's Graduate School of Education. They all took part in oral history workshops and have contributed to chapters in this volume.

Between 2021-2023, I served as an international advisor on Education 2.0 for the USAID Teach for Tomorrow (T4T) project of the Education Development Center (EDC). This work allowed me to continue returning to Egypt once the pandemic settled and stay involved in the 2.0 reforms as a policy advisor. Thanks to EDC colleagues Christina N'Tchougan-Sonou, Amr Orabi, Andrew Lewis, Randa Gaber, and Hala El Serafy for their constant engagement about the Education 2.0 reforms, and to EDC for granting permission to develop an internal research report about online informal teacher professional development into Chapter 28 of this volume.

Oral history interviews depend on participants' time, generosity of spirit, and willingness to talk about their personal and professional lives for the sake of sharing knowledge and adding to the historical record. Deep thanks to all the oral history participants who include Dr. Tarek Shawki, Minister of Education and Technical Education (2017-2022), Dr. Nawal Shalaby, Director of the Center for Curriculum and Instructional Materials Development, CCIMD (2017-2022), Ahmed Daher, Deputy Minister of Education for ICT, Deena Boraie, Senior Advisor For Assessment, Examinations and Curriculum, Nelly El Zayat, Advisor on Early Childhood Education and Educational Policy, Dalia Ibrahim, CEO of Nahdet Misr Publishing House, Dahlia Fouad, Director of Educational Content and Translation at Nahdet Misr Publishing Group, Emily Waters, International Senior Project Director, Discovery Education, Thomas Kelley, Cultural Expert, National Geographic Learning, Nevine El Souefi, CEO of Edupedia, Juan Manuel Moreno, former Lead Education Specialist in the MENA Human Development Department of the World Bank, Amira Kazem, Senior Operations Officer, Education Global Practice at the World Bank, Yousra Allam, Minister

of Education's Advisor for Marketing and Communication, Majid M. Al-Sadek, Head of the Egyptian National Scientific and Technical Information Network (ENSTINET) and Data Center Administrator at the EKB, Mahmoud Dawoud, Marketing and Training Director at Lims Egypt, Mahmoud Hussein, Managing Director at Lims Egypt, Mohamed H. El-Araby, EKB Coordinator, Technical Support Division, Ingy Mashhour, Assistant Minister for Executive Affairs and Special Needs, Manar Ahmed Sharouda, Education Specialist at UNICEF, and Mai Magdy, Channels Manager for Madrasatna 1 and 2. An enormous expression of gratitude is also owed to the many teachers, students, and parents who participated anonymously in this research, some over the course of a year.

I undertook this work while maintaining my position as a professor at the College of Education at the University of Illinois at Urbana-Champaign (UIUC). The university could not have been more supportive. Special thanks to James Anderson, former dean of the College of Education, and current dean Chrystalla Mouza, for their flexibility, encouragement and support, to the Office of Sponsored Programs for a grant to continue the oral history work during the pandemic, and to two dedicated graduate student research assistants from the Global Studies in Education program, Essam Elkorhli and Sunera Khan who helped in the documentation efforts. Many thanks also to Marty Creel of Discovery Education for providing copies of their Education 2.0 textbooks and Teacher's Guides to the UIUC library, and to Laila Hussein, the Middle East and North African Studies Librarian, for cataloging these materials. All the 2.0 books and Teacher's Guides along with other primary source materials are available digitally on the project website at <https://www.edu2-egypt.com>.

This book is dedicated to the steadfast educators, textbook authors, digital content creators, and most of all the resourceful, energetic, aspiring students who, despite setbacks and sometimes against many odds, believe in the promise of education. They keep us all believing in it too.

Linda Herrera, Champaign, 2025

Contributor Biographies

Nairy AbdElShafy holds an M.A. in Oral History from Columbia University (2019) and a B.Sc. of Political Science from Cairo University (2008). An independent Egyptian educator and oral historian, she researches intergenerational narratives of trauma and memory within different migrant and internally displaced communities. She is currently an editorial board member of the *Oral History Review*.

Menna Ahmed earned her Master of Education (M.Ed.) in Education Studies from the University of Glasgow in 2020. Her research interests include education, pedagogy, and culture. She has worked for over fourteen years as an educator, researcher, and community development practitioner in Egypt and has contributed to various local and regional alternative education projects, particularly for marginalized groups. Currently, she leads the SPARKS (Strengthening Pedagogical Approaches for Relevant Knowledge and Skills) project in Egypt in partnership with the Center for Education at the Brookings Institution.

Ayman Alhusseini holds an M.A. in political science from Saint Joseph University in Beirut, Lebanon with a thesis focused on *Ahliyya* (not-for-profit) universities in Egypt. He is an independent researcher, evaluation consultant, and translator. He has contributed to multiple evaluation assignments in formal education, higher education, and youth development in Egypt and the MENA region for Save the Children, USAID, and GIZ, among others.

Ebtehal Elghamrawy earned an M.Ed. in International Education Policy (IEP) from the Harvard Graduate School of Education where she was also a Teaching Fellow, and a Joint European Master's degree in Comparative Local Development from a consortium of four European universities. She is currently Education Specialist at UNICEF, leading the

quality learning and skilling portfolio for pre-tertiary education. With over fifteen years of experience in program and education management, she has designed, implemented, evaluated, and consulted on education initiatives for more than ten international and national organizations across five countries. Her experience includes collaborations with UNESCO, the non-profit FHI360, TEDxCairo, AIESEC (Association Internationale des Étudiants en Sciences Économiques et Commerciales), and the Educate Me Foundation. Her research and professional efforts are dedicated to enhancing public education quality through the lens of social equity.

Mohamed Elsayed holds an M.A. in History from SOAS, University of London. He is an independent history researcher and educator with research interests that span labor, urban history, and social science education in Egypt. He has worked on various projects in Egypt, particularly in the Nile Delta and Suez Canal Zone, promoting public history and humanities education.

Linda Herrera is Professor in the Department of Education Policy, Organization and Leadership in the Global Studies in Education program at the University of Illinois at Urbana-Champaign. She was director of the Education 2.0 Research and Documentation Project in Egypt and served as an international education advisor. A social anthropologist with expertise in the Middle East and North Africa, her research and teaching cover a range of areas including education and power, youth studies, citizenship education and critical democracy, technology and society, and international education development. Her books include, *Educating Egypt: Civic Values and Ideological Struggles* (American University in Cairo Press, 2022), *Global Middle East: Into the Twenty-First Century* (with A. Bayat, University of California Press, 2021), *Revolution in the Age of Social Media* (Verso, 2014), *Wired Citizenship: Youth Learning and Activism in the Middle East* (Routledge, 2014), *Being Young and Muslim: New Cultural Politics in the Global South and North* (with A. Bayat, Oxford University Press, 2010), and *Cultures of Arab Schooling: Critical Ethnographies from Egypt* (with C. A. Torres, State University of New York Press, 2006).

Nariman Moustafa holds an M.Ed. from Harvard University's Graduate School of Education. She is a Senior Research Associate at EdTech Hub, the president of the initiative for self-discovery and development, a co-founder of the Ecoversities Alliance, and a visiting scholar at the Brookings Institution's Center for Universal Education and the Center for Lebanese Studies at the American University in Beirut. Her research focuses on decoloniality and social justice in education, and more recently on EdTech.

Heba Shama holds an M.A. in Anthropology and Development Management from the London School of Economics and Political Science, and a Bachelor's in Architectural Engineering from the American University in Cairo. A development professional with expertise in sustainable community development, policymaking, heritage documentation, and social inclusion in the Arab region, she has held key positions at the United Nations, including Officer for the Agenda 2030 and SDGs Coordination Cluster at UNESCWA, and Programme Coordinator at UNESCO's Regional Office for Arab States. Her research interests include policymaking in the Arab region, heritage and socio-economic studies, and ethnographic methods.

Nevine El Souefi, Ed.D., is the founder and CEO of 'Edupedia' for Educational Consultation, Training, and Curriculum Designing. She was the Regional Development and Recognition Consultant for the International Baccalaureate Organization (IBO) in Egypt and headed the curriculum review committee for the Graduate School of Education-Diploma Program at the American University in Cairo (AUC). She has led innovative educational programs in a number of higher education and K-12 institutions and educational research projects, her latest one being a UNESCO case study titled: 'The Egyptian Knowledge Bank: A Case Study of Egypt's National Digital Learning Platform'.

Tarek Galal Shawki was the Minister of Education and Technical Education in Egypt from 2017-2022. He received his undergraduate education at Cairo University and his PhD at Brown University. He has held positions as University Counselor at the American University in Cairo, Chair of the Specialized Presidential Council for Education &

Scientific Research (2014-2022), Secretary General of the Presidential Specialized Councils in Egypt (2015-2017), Dean of the School of Sciences and Engineering at the American University in Cairo (2012-2015), Director of the Regional UNESCO Bureau for Science and Technology in Arab States (2008-2012), and professor of Theoretical and Applied Mechanics at the University of Illinois at Urbana-Champaign (1986-1999), where he taught a variety of engineering and applied mathematics courses to both undergraduate and graduate students. Dr. Shawki has led numerous global, regional, and national projects involving the integration of ICTs in education, science, and culture, including the Egyptian Knowledge Bank.

Hany Zayed is an Assistant Professor of Sociology at the Department of Cultural and Social Sciences at Marquette University. He earned his MA and PhD in Sociology from the University of Illinois Urbana-Champaign (UIUC). His research covers the digital sociology of education, the political economy of educational technologies, digital social research methods, digital developmentalism, and social movements and collective action. His research has been published in *The British Journal of Sociology of Education*; *Learning, Media and Technology*; *Theory, Culture and Society*; and *The Journal of Digital Social Research*. His forthcoming book with MIT press entitled *Digital Paradoxes*, examines the contradictions between the utopian promises and messy realities of Egypt's educational digitalization.

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List of Abbreviations

4IR	Fourth Industrial Revolution
AD	Ahmed Daher
ADHD	Attention Deficit Hyperactivity Disorder
ADWA	Advancing the Decent Work Agenda in North Africa
AI	Artificial Intelligence
AK	Amira Kazem
AR	Augmented Reality
ASRT	Egyptian Academy of Scientific Research and Technology
AU	African Union
AUC	American University in Cairo
BAC	Le baccalauréat général (French system)
CACE	Center for Adult and Continued Education
CBC	Capital Broadcasting Center
CCIMD	Center for Curriculum and Instructional Materials Development
CEO	Chief Executive Officer
CIDA	Canadian International Development Agency
COPPA	Children's Online Privacy Protection Act of 1998
CPD	Continuous Professional Development
CPF	Country Partnership Framework
CTPD	Continuous Teacher Professional Development
DB	Deena Boraie
DE	Discovery Education
DF	Dahlia Fouad
DFO	Idara Facilitator Officer
DI	Dalia Ibrahim
DIP	Digital Identity Project

DIY	Do It Yourself
DLIs	Distribution Linked Indicators
DLRs	Disbursement Linked Results
DP	Diploma Program
DPG	Donor Partner Group
DPS	Division of Public Service
DQ	Digital Intelligence Quotient
DT	Digital Transformation
DSM 5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
ECA	Europe and Central Asia
ECE	Early Childhood Education
EdD	Education Doctorate
EdTech	Education Technology
EDU 2.0	Education 2.0
EE	Ebtehal Elghamrawy
E-Exam	Electronic Exam using the Tablet
EJEP	Egypt-Japan Education Partnership
EJS	Egypt-Japan School
E-JUST	Egypt-Japan University of Science and Technology
EKB	Egyptian Knowledge Bank
ELI	English Language Institute
ENSTINET	Egyptian National Scientific and Technical Information Network
EUL	Empowering Underground Laboratories Consortium
EW	Emily Waters
FAQ	Frequently Asked Questions
FB	Facebook
FOE	Faculty of Education
G	Gamal (pseudonym of student interviewed)
GEANT	Gigabit European Academic Network
GIS	General Intelligence Service (GIS)
GKI	Global Knowledge Index
GoE	Government of Egypt
GPA	Grade Point Average
GPE	Global Partnership for Education

GPS	Global Positioning System
GSE	Graduate School of Education
HZ	Hany Zayed
IB	International Baccalaureate
IBO	International Baccalaureate Organization
ICDI	International Computer Driving License
ICT	Information and Communication Technology
ID	Identification
IELTS	International English Language Testing System
IEP	Individualized Education Program
ILO	International Labour Organization
IM	Ingy Mashhour
IoT	Internet of Things
IPLC	Informal Professional Learning Communities
IPR	Intellectual Property Rights
IT	Information Technology
ITC	Intensive Training Course
ITE	Institute for Teacher Education
ITPD	Informal Teacher Professional Development
IQ	Intelligence Quotient
JICA	Japanese International Cooperation Agency
JM	Juan Manual Moreno
K-12	Kindergarten to Grade 12
K-6	Kindergarten to Grade 6
KG	Kindergarten
KPIs	Key Performance Indicators
Law #10	Law No. 10 of 2018 Promulgating Law on the Rights of Persons with Disabilities
LEG	Development Partners of the Local Education Group (LEG) in Egypt
LH	Linda Herrera
LMS	Learning Management System
LSCE	Life Skills and Citizenship Education
M&E	Monitoring and Evaluation
MA	Manar Ahmed Sharouda (Chapter 10)
MA	Mohamed El-Araby (Chapter 21)

MBRF	Mohammed bin Rashid Al Maktoum Knowledge Foundation
MCIT	Ministry of Communications and Information Technology
MCQ	Multiple Choice Question
MD	Mahmoud Dawoud
MDM	Mobile Device Management
MENA	Middle East and North Africa
MFO	Mudiriya Facilitator Officer
MH	Mahmoud Hussein
MHESR	Ministry of Higher Education and Scientific Research
MM	Mai Magdy
MoE	Minister of Education
MOETE	Ministry of Education and Technical Education
MOHESR	Ministry of Higher Education and Scientific Research
MOIC	Ministry of International Cooperation
MOOCs	Massive Open Online Courses
MOPMAR	Ministry of Planning, Monitoring and Administrative Reform
MoU	Memorandum of Understanding
MPED	Ministry of Planning and Economic Development
MS	Majed Al Sadek
MTC	Military Technical College
MYP	Middle Years Program
NCEEE	National Center for Examination and Educational Evaluation
NCERD	National Center for Education Research and Development
NGO	Non-Governmental Organization
NM	Nariman Moustafa
NREN	National Research and Education Network
NS	Nawal Shalaby (Chapter 13)
NS	Nevine El Souefi (Chapter 16)
NZ	Nelly El Zayat
OECD	Organization for Economic Cooperation and Development

OHA	Oral History Association
PAT	Professional Academy of Teachers
PCU	Project Coordinating Unit
PD	Professional Development
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
PLC	Professional Learning Communities
PLJ	Professional Learning Journey
PLP	Presidential Leadership Program
PR	Public Relations
Primary stage	Grades 1-6
Prep	Preparatory stage, also middle school (Grades 7-9)
PYP	Primary Years Program
RDBMS	Relational Database Management System
RPs	Research Projects
RIM	Research Information Management
S&T	Science and Technology
SamI	Security and Searching Market Language
SCDS	Supreme Council for the Digital Society
SCE	School of Continuing Education
SCU	Supreme Council of Universities
SDS	Sustainable Development Strategy
SEN	Special Education Needs
SEO	Search Engine Optimization
SIS	State Information Service
SMEs	Small and Medium Enterprises
SQL	Structured Query Language
STEM	Science, Technology, Engineering, and Mathematics
STDF	Science and Technology Development Fund
TDS	Total dissolved solids
TEFL	Teaching English as a Foreign Language
TESOL	Teaching English to Speakers of Other Languages
TIMSS	Trends in International Mathematics and Science Study
TK	Tom Kelley
TOEFL	Test of English as a Foreign Language

TOR	Terms of Reference
TOT	Training of the Trainer
TPD	Teacher Professional Development
Transitional years	Grades 3-9
TVET	Technical and Vocational Education and Training
TS	Tarek Shawki
UAE	United Arab Emirates
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United National Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
VP	Vice President
UNICEF	United Nations Children's Fund
WEF	World Economic Forum
WHO	World Health Organization
WWF	Worldwide Fund for Nature
WYF	World Youth Forum
YA	Yousra Allam

1. Introduction: Learning from Egypt's Historic Education 2.0 Reforms

Linda Herrera

Abstract

In September 2018, Egypt's Ministry of Education and Technical Education (MOETE) began rolling out elements of a 'new education system' or 'Education 2.0'. This chronicle of Education 2.0 provides a rare glimpse into a state-led national education reform oriented towards digital transformation and infrastructure expansion, curriculum change and teacher Professional Development, and culture change. The chapter lays out the political, policy, and social context in which the reforms unfolded, happening in the wake of the Arab uprisings, and in keeping with the United Nations Sustainable Development Goals and Africa Agenda 2063. The research draws on oral histories from the 'top down' and 'bottom up' with figures from the state, society, and international and private sector partners. It finds that in a rapidly changing, oftentimes harsh, and unpredictable world, it is imperative to continue to strive for a social contract in education oriented towards human dignity and a genuinely sustainable future, for our collective survival depends on it.

Keywords

Africa, digital transformation, distance learning, Education 2.0, Fourth Industrial Revolution, sustainable development, oral history, Sustainable Development Goals

1. Embarking on a Bold Education Reform

What people do not understand is that what we did was a miracle, an absolute miracle. (Tarek Shawki, Chapter 2)

In September 2018, Egypt's Ministry of Education and Technical Education (MOETE) began rolling out elements of a 'new education system' (*al-nizam-al ta'alim al jadid*) also known as 'Education 2.0'. This bold attempt to reimagine and redesign the system of Kindergarten through to Grade 12 had not been attempted for well over half a century. The idea was to raise the quality of a long deteriorating and over-stressed education system while transforming the culture of learning in ways that would prepare the society for the unpredictable yet unstoppable changes occurring in the realms of work, communications, economy, and society associated with the Fourth Industrial Revolution (4IR) (Rizk and Ayman 2023). The reforms were implemented at scale, an audacious undertaking since Egypt's education system spans a diverse social and economic landscape with over 25.6 million students, 1.4 million teachers, and 57,000 schools (in 2023). It is by far the largest education system in the Middle East and North Africa (MENA) and the second largest in Africa, after Nigeria. In material terms, public education is exceedingly under-resourced and suffers from acute classroom overcrowding, an ageing infrastructure, and chronic teacher shortages.¹ This new system, with its skills-based curriculum, teacher professional development on new learning approaches, updated system of technical and vocational education and training (TVET) (Technical Education 2.0), and digital transformation, 'the combined effects of several digital innovations' (Hinings et al. 2018: 55),² would supposedly take Egypt on a 'journey to the future' (Shawki 2019).

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- 1 Between 2004-2021 the state instituted a freeze on hiring permanent teachers in favor of contracting temporary hires. This resulted in an enormous deficit of over 170,000 teachers and has turned the profession into precarious 'seasonal wage-seeking earners instead of stable professionals and partners in educational reform' (Alternative Policy Solutions 2024). It is projected that between 2022 and 2027, 462,000 new teachers need to be hired, and 362,000 new classrooms need to be built (MOETE 2023: 190). As of 2025, these numbers are nowhere near on track to be realized. For more on the teacher shortages, see Sayed (2024). With over 51% of the population in Egypt are under twenty-five years, there will be a continued demand for teachers.
 - 2 For a more comprehensive definition of Digital Transformation (DT) see Gregory Vial who defines it as 'a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies' (2019: 121).

This chronicle of Education 2.0 provides a rare glimpse into a state-led national education reform. The volume is informed by the questions: What big ideas and theories of change underpin the Education 2.0 reforms and where did they come from? Who were the figures driving the change, and what did they hope to achieve? What did students, teachers, and families understand about the reforms, and how did they interact with them? What does this national experiment reveal about state-society relations and the social contract around the purposes, expectations, and future of education?

From its inception, the state's intention was not merely to 'reform' the outdated education system, but to 'transform' it (Fig. 1.1). As put forward in the first strategic document issued by the Ministry of Education and Technical Education in May 2018,

Egypt is going to transform its public education system. From kindergarten grades to the end of schooling, the content of what is learned will be brought up to date and made relevant to the challenges of the 21st century. Higher order skills and capabilities will replace the current focus on rote learning and factual recall. The way in which pupils learn and are assessed will be transformed, with technology playing a central role for every child and teacher. The transformation journey will take from now until 2030. We will start this year, with a new early years curriculum and replacement of the Thanawiya Amma school leaving exam (MOETE 2018a).



Fig. 1.1 KG classroom with the new Education 2.0 books and seating arrangement.
Photo by Linda Herrera, Cairo, 2018.

More than a conventional reform, Education 2.0 also set out to reengineer the sector's political economy. As asserted by the Deputy Minister of Education Ahmed Daher, Education 2.0 constituted a mega state development project akin to building the Aswan Dam or the Suez Canal (Chapter 18). It involved laying fiber optic cables throughout the country to provide schools with WIFI connectivity and servers, establishing data centers for managing and storing the massive amount of digital content from its online platforms, building brick and mortar factories and technical schools to produce the hardware, software, and labor force needed to stimulate the education market, and creating a state-of-the-art media studio from the ground up to produce thousands of videos to support the 'open school' concept (see Chapter 22).³ Between 2018-2022, the MOETE achieved massive operational feats as it equipped high schools across the country with 9,246 laboratories, 36,210 smart boards, and 27,439 upgraded classrooms (SIS 2024). As of 2024, it distributed 3.3 million tablets to first-year high school students.

The person tasked with overseeing the first critical phase of Education 2.0 was Dr. Tarek Shawki, an engineer by training and avowed tech evangelist.⁴ Shawki had previously held positions at UNESCO as Director of the Regional Bureau for Science in Arab States (2008-2012) and Chief of the Section for ICTs in Education, Science and Culture (2005-2008). Prior to that he was a professor of Theoretical and Applied Mechanics at the University of Illinois at Urbana-Champaign (1986-1998) (see Chapter 2 and Chapter 4).⁵ He distinguished himself nationally by getting the mega knowledge project, the Egyptian

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- 3 UNESCO announced the opening of 'The Educational Content Studio' on 1 April 2024 at the Professional Academy of Teachers (PAT). The studio is part of the UNESCO-Huawei Technology-enabled Open Schools for All Project (UNESCO 2024).
 - 4 As he elaborates in his 2015 Ted Talk, 'Learning for Life', Shawki has been a tech-evangelist (or 'techno-optimist', 'techno-solutionist', 'techno-utopian') for as long as he can remember. This designation refers to 'someone who celebrates technologies and believes in the power of technological solutions to redress social problems and create improved, more efficient, and more prosperous societies with little recognition of the darker and dystopic sides of those technologies' (see Herrera 2022: 14).
 - 5 See video excerpts of Tarek Shawki talking about his time working on EdTech at UNESCO (<https://www.youtube.com/watch?v=w7ys6gqo8ao>) and at the University of Illinois during the birth of the Internet (<https://www.youtube.com/watch?v=QmCRIsRZY0U>) on the Education 2.0 Research and Documentation YouTube channel.

Knowledge Bank (EKB), off the ground. Launched in January 2016, it initially served Egyptian universities, institutes, and research centers, but later grew to include K-12. It was the largest public digital library and knowledge hub with content in English, Arabic, and French from 120 databases and thirty-one publishers.⁶

Shawki was appointed Minister of Education and Technical Education in 2017 and given the herculean task of turning around the nation's overstretched and under resourced education system by building a 'new education system'. He immediately took to the airwaves and social media to proselytize for a 'revolution' in education (Shawki 2019). But as anyone familiar with a top-down revolution understands, it is an uphill battle to convince people of the efficacy of your vision, let alone steer cultural and behavioral change in a prescribed way. Culture change cannot merely be reengineered in a top-down manner through technology integration, media campaigns, investments, and feats of planning. These sorts of interventions can lay the groundwork for change, and digital transformation invariably influences and changes human behaviors (Vial 2019), but culture change is unpredictable and multidirectional. Moreover, as witnessed during the popular uprisings of 2011-2013, the social contract between the state and its citizens has long been strained and suffers from a 'trust deficit'.⁷

When news of the ambitious reform reached the public in 2018, people seemed weary. Even though they constantly grumbled about the old system, parents complained that the reforms would not solve the issues they cared most about and worried they might change the rules of the game in ways that could disadvantage their children. As the Minister explained,

Parents were angry because we were giving them one thing, while they wanted something else. For instance, in 2018, after we deployed the first set of new textbooks for KG1, KG2, and Grade 1, we were surprised to learn that people did not seem to be interested in this at all. [...] They were talking more about infrastructure issues like the distance to school and the condition of the facilities, not about learning and skills. [...]

6 The EKB, an 'Egyptian made and managed platform' (El Zayat 2020), is a publicly funded project that partners with private companies and contractors for its day-to-day functioning (El Souefi 2024).

7 For some examples of the fraught social contract in Egyptian education, see Herrera 2022, Ibrahim 2021, Krafft 2012, Sobhi 2023.

We needed to address the cultural understanding of schooling and to convince every parent that their kids should go to school to learn, not just to get a degree and a status. [...] When parents prioritize having their kids get that degree in the shortest route possible, this opens the door for a lot of corruption like cheating and automatically passing kids, even when they cannot read (Chapter 2).

Public trust in the new system was further strained by inconsistent messaging, misinformation, and rumors that circulated on social media (Boraie and Zayat 2021, Chapter 12, Chapter 24, Chapter 25). The Minister tried to control the message by directly engaging with the public on Facebook and WhatsApp. He was a member of no less than three thousand WhatsApp groups. He would post comments and join discussions at all hours of the night. He explained, 'I felt I had to engage and answer their questions. But the more I answered, the more they attacked me and the nastier they were' (Chapter 2). When looking back on his time as Minister, Tarek Shawki muses, 'Sometimes it is better to speak to people without the government hat. I learned that once you are in the government, people consider you the enemy, or they suspect you are the enemy' (Chapter 2).

Teachers who are no strangers to reforms, also viewed the Education 2.0 'transformation' with skepticism. They have witnessed countless initiatives over the years, all while their professional status and wages have been tumbling in a free fall. Despite some short trainings, teachers were ill-prepared for the changes. The twenty-eight Faculties of Education (FoEs) which prepare teachers to work in the nation's schools, were not even aware that something called Education 2.0 was underway (Chapter 27 and Chapter 29, Zaalouk et al. 2016). This was partly because FoEs are administratively under the Ministry of Higher Education which is governed by the Supreme Council of Universities (SCU), whereas the K-12 system is under the auspices of the MOETE. Shawki himself pointed to the lack of coordination between the different parts of the education system, describing it like 'an orchestra without a conductor'. He said, 'There might be a phenomenal soloist in the orchestra, but these hundreds of musicians cannot play together. This leads to disharmony. We do not have any coordination' (Chapter 3).

Perhaps even more challenging than the lack of coordination of the formal parts of the system, is the 'informal' parallel system of private

tutoring, '*durus khususiya*', also known as the 'shadow education system' (Bray 2006 and Bray and Kwo 2013). This system operates according to its own system of rewards, organization, ethics, economy, and hierarchy. As reported in the education sector report of 2023, 'Among households with children in public schools, private tutoring accounts for a staggering 49% of total education spending compared to only 10% for those with children in private schools' (MOETE 2023: 65). While it permeates all educational levels, private tutoring is most prevalent at the high school level because of the high stakes Thanaweya Amma exam (a high school leaving/university entrance exam). There is also a spike in private lessons for the Grade 9 exams which determine if students will be tracked into a technical or university bound high school.⁸ Neither the Ministry of Education nor any other entity have been able to effectively regulate or control the ubiquitous market of private lessons, though many have tried.

A system built around high stakes exams tends to come with ancillary problems of academic dishonesty and cheating (El-Kholi 2018).⁹ The Minister initially thought he could leverage technology to eliminate cheating by administering electronic exams which allow for 'human free' grading. However, instances of leaked exams, technology hacks, and widescale cheating persisted (Chapter 24, Chapter 25, Chapter 26).¹⁰ In a system that many students experience as unfair and arbitrary, 'cheating' is not an entirely straightforward concept. For instance, a high school student describes how his classmates smuggled non-regulation notes and books into an exam hall but did not see what they were doing

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- 8 Scholars have been writing about the phenomenon of private lesson markets in Egypt for decades, if not longer. For a selection of works on this topic from different perspectives, see Assaad and Krafft 2015, Farag 2006, Hartmann 2008, Herrera 2022, Sieverding et al. 2019.
 - 9 There are numerous studies on cheating and perceptions of academic dishonesty. For example, see Yousry 2012 and Zayed 2024. In relation to the SAT exams, see Cairo Scene 2017.
 - 10 In a well-publicized incident in 2022 for example, the head of a middle school Examination Committee and deputy headmistress of a secondary school for girls, Ms. Wedad Hamdi, enforced anti-cheating measures which included preventing students from bringing their mobile phones to the exam hall. She received threatening text messages and faced an angry throng of parents outside the school ready to assault her. She had to leave the school by police escort and rode off in an armored vehicle. After the incident, the minister spoke with her in an interview about how students smuggle in phones and use computer applications during exams. He proclaimed, 'We are speaking about a phenomenon' (Shawki 2022).

as unethical. He explains, ‘The reason we did this was because we do not trust the system that makes the rules. [...] We were not trying to be immoral or something but just playing by our own rules. We did not trust the thinking behind the decisions. We did not think the rules they set were valid’ (Chapter 26).

In August 2022, after nearly five years in office (2017-2022), Tarek Shawki, a driving force behind the Education 2.0 reforms, was replaced during a cabinet shuffle (see Chapter 2 and Chapter 6). His successor Dr. Reda Hegazi (2022-2024), who had been Deputy Minister of Education for Teachers’ Affairs, belonged to the previous Education 1.0 system and was never a strong advocate of Education 2.0. But since the reforms were integral to the state’s 2030 development plan, he was mandated to follow through with them, though they continued on a bumpier road. On 2 July 2024, Reda Hegazy was replaced as Minister by Mohamed Abdel-Latif who had previously worked in the private sector as Executive Director of the Nermin Ismail Schools Group, a franchise owned by his mother.¹¹ Abdel-Latif’s appointment was immediately mired in controversy after local fact-checkers alleged that his doctoral degree was from a fake university and his master’s degree could not be verified (Hendi 2024, Mansour 2024, Middle East Eye 2024). As of writing in mid-2025, Minister Abdel-Latif is dismantling many aspects of Education 2.0, including the books that were intended to serve the country through 2030. The digital transformation elements of Education 2.0 continue under the stewardship Deputy Minister Ahmed Daher who has been especially active in integrating Artificial Intelligence (AI) systems into schooling for more personalized learning (Daher et al. 2025) (see below).

2. Sustainable Development in Egypt’s New Republic

The call to overhaul Egypt’s education system emerged at a critical juncture in the history of the MENA region and needs to be placed in a broader regional and global context. Starting in Tunisia in December 2010 and continuing through 2013, a groundswell of popular uprisings

¹¹ Mohamed Abdel-Latif’s maternal grandfather was Field Marshal Ahmad Ismail Ali, Egypt’s Minister of War during the 1973 Yom Kippur War. Many have speculated that his family’s connection to the military, rather than his professional qualifications in education, accounted for his appointment to the role of Minister.

spread in Egypt, Syria, Libya, Yemen, Bahrain, Palestine, and beyond. Multitudes of young people joined by scores of others, took to the streets and social media to express their grievances about the lack of employment opportunities, widespread corruption, poor quality education, the absence of basic rights and protections, and their inability to lead a life of 'dignity' (*karama*). The people demanded *Ayesh, Huriyya, Idala Ijtima'iyya* ('Bread, Freedom, Social Justice'). The 25 January 2011 Revolution in Egypt resulted in the toppling of the thirty-year presidency of Mohamed Hosni Mubarak (1981-2011) and set into motion a series of upheavals over the succeeding years.¹² From 2011-2014, Egypt witnessed three constitutional conventions,¹³ three election cycles, four heads of state,¹⁴ and from 2011-2017, seven ministers of education.¹⁵

In 2014 as the dust began to settle, the Arab Republic of Egypt entered 'a new era'. Under the presidency of Abdel Fattah El-Sisi, former Field Marshal and Director of Military Intelligence, the post-revolution government proclaimed itself the legitimate bearers of the revolution,¹⁶ though detractors point to this period as the start of the

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- 12 A large number of scholarly works deal with the causes and manifestations of the Arab uprisings and peoples' calls for dignity and justice. For example, see Badiou 2012, Bayat 2017, Herrera 2014, and Tripp 2013.
 - 13 For a timeline of constitutional developments between 2011 to 2014, see the 'Constitutional History of Egypt' at *Constitutionnet*, [https://constitutionnet.org/country/egypt#:~:text=Key%20Country%20Documents%20Index%20*%20Constitution%20of,declaration%20\(July%202013\)%20*%20More%20Egypt%20Documents](https://constitutionnet.org/country/egypt#:~:text=Key%20Country%20Documents%20Index%20*%20Constitution%20of,declaration%20(July%202013)%20*%20More%20Egypt%20Documents)
 - 14 Between 2011-2014, the four heads of state were the Supreme Council of the Armed Forces headed by Field Marshal Mohamed Hussein Tantawi (2011-2012), Mohamed Morsi, formerly of the Muslim Brotherhood (2012-2013), Interim President Adly Mansour (2013-2014), and Abdel Fattah El-Sisi, former Field Marshal (2014-present).
 - 15 From the time of the Egyptian uprising of 25 January 2011 to the appointment of Tarek Shawki as minister of education in 2017, there were seven ministers of education as follows: Ahmed Zaki Badreldin (2010-2011), Ahmed Gamal El-Din Moussa (2011), Gamal El-Araby (2011-2012), Ibrahim Ghoneim (2012-2013), Mahmoud Abo El-Nasr (2013-2015), Moheb Al-Rafei (2015), and Al-Hilali El-Sherbini (2015-2017).
 - 16 The preamble of the 2014 constitution reinforces this view with the words: '... [O]ur patriotic army delivered victory to the sweeping popular will in the Jan 25-June 30 Revolution that called for bread, freedom and human dignity within a framework of social justice and brought back the homeland s free will' (Arab Republic of Egypt 2014).

‘counterrevolution’.¹⁷ As the state thwarted dissent movements and clamped down further on citizens’ rights, it also pursued ambitious mega projects to forge a ‘New Republic’ (*al-jumhuriyya al-jadida*).¹⁸ These mega projects spanned several sectors including transportation (through the construction of new roads and bridges and expanding the Suez Canal), urban development and real estate (by erecting new ‘smart cities’ including a new administrative capital),¹⁹ public health (with the launching of the 100 million health campaign to combat Hepatitis C, developing a universal health insurance system, and opening new hospitals), tourism (through building new museums and expanding touristic sites),²⁰ rural development (through initiatives in the Egyptian countryside),²¹ and digital transformation (through national projects such as Digital Egypt).²² The state project of building a ‘new education system’, was arguably the most challenging of all.

Egypt had been faring well in education in terms of net enrollments rates which exceeded 99% for the primary level (UNESCO 2021). In the category of ‘quality of education’ however, as measured by different global rankings, the country’s education system was in dire straits. Recognizing that rankings carry serious biases and power imbalances, they can nevertheless expose systemic problems. For example, according to the 2013-2014 Global Competitiveness Report which is primarily concerned with a country’s economic performance, Egypt ranked 148 out of 148 countries in the category of ‘quality of primary education’

17 For works on the counterrevolution in Egypt, see Mandour 2024, Said 2023, Wahba 2023 and el-Hamalawy 2026.

18 On 15 July 2021, President Abdel Fatah El Sisi declared Egypt a ‘New Republic’ when inaugurating its ‘Decent Life Initiative’ to upgrade and develop the Egyptian countryside.

19 For an excellent history of how government policy has spurred Egypt’s housing crisis, see Shawkat 2020.

20 There have been several museum openings in different governorates of Egypt (Egypt Today 2020). The two most notable museum projects are the Grand Egyptian Museum (GEM) and the National Museum of Egyptian Civilization (NMEC).

21 The sheer amount of borrowed money to undertake all these mega projects has contributed to the devaluation of the Egyptian pound and exacerbated economic inequality (Mandour 2024).

22 See the Ministry of Communications and Information Technology’s Digital Egypt platform at https://mcit.gov.eg/en/digital_Egypt

(Schwab and Sala-i-Martin 2016).²³ In the 2016 Progress in International Reading Literacy Study (PIRLS), Egypt ranked 60 out of 61 participating countries, and in the Trends in International Mathematics and Science Study (TIMSS) of 2019, Egypt ranked 34 among 39 participating countries on math, and 37 on science. These ranking underscored that a majority of students had 'not acquired the foundational skills to read to learn other subjects, presenting one of the biggest challenges in the education system' (MOETE 2023: 41). In other words, Egypt was part of a 'global learning crisis' defined as when more than half of the children are not able to read and understand a simple text by age ten (Saavedra 2019). Under these challenging circumstances, the state sought to forge a state-of-the-art education system that would overcome the learning crisis while advancing a digitally oriented, market-based knowledge economy.

Egypt's ambitions are most clearly illustrated in the Egyptian Constitution of 2014 which puts a high currency on education. The word 'education' appears twenty times across seven articles (compared to ten mentions in four articles in the previous Constitution of 1971 Amended in 2007).²⁴ Education is couched in a language of 'global', 'international', 'standards', 'knowledge economy', and 'digital', as in 'eradicating digital illiteracy'.²⁵

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- 23 'The Global Competitiveness Report 2013–2014' is published by the World Economic Forum. It is included here because its vision aligns with the state's objectives of leveraging education to advance Egypt's economic position. Note that Egypt's position in the category 'quality of primary education' stood at 116 out of 140 countries in 2015–2016. It declined in 2017–2018 to 133 out of 137 (World Economic Forum 2017a). For a critical discussion on the orientation of the Global Competitiveness Report in education see Attalla 2013.
- 24 The articles in the 2014 Constitution pertaining to education include Article 19 on General Education which states 'Education is the right of all citizens', and the state will 'provide education in accordance with international quality standards'; Article 20 on Technical Education and Professional Training refers to 'global quality criteria' and the 'needs of the labor market'; Article 21 on Academic independence mentions 'providing university education in accordance with global quality criteria'; Article 22 on Teachers 'guarantees the development of their academic competencies and professional skills'; Article 23 on Scientific Research mentions the role of research in 'building a knowledge economy'; and Article 25 on Illiteracy states 'The state commits to developing a comprehensive plan to eradicate alphabetical and *digital illiteracy* [emphasis added] for all citizens from all age groups'.
- 25 A nation's digital literacy can be measured by using a Digital Intelligence Quotient (DQ), 'the sum of social, emotional, and cognitive abilities that enable individuals to face the challenges and adapt to the demands of digital life' (Cocorocchia 2018).

A constitution should be viewed as an aspirational document rather than evidence of actual practices and policies. For instance, Article 19 asserts that the state is committed to allocating at least 4% of the GDP on K-12 education, but the actual allocation has been closer to 2% and as low as 1.7% in 2024, well below international benchmarks (Human Rights Watch 2025). Nevertheless, key ideas articulated in the 2014 Constitution map directly onto the Education 2.0 reforms.

Whereas the Constitution captures the ideals of the New Republic, the blueprint for how to achieve its development goals is best represented in the 'Sustainable Development Strategy (SDS): Egypt Vision 2030' (MOPMAR 2016 and 2023). This development strategy is in line with the United Nations Sustainable Development Goals (SDGs), adopted by all UN Member States in 2015.²⁶ The concept of sustainable development first gained currency in 1987 with the Report, 'Our Common Future' (The Brundtland Report) of the United Nations World Commission on Environment and Development. The core idea was that 'Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs'. Endorsed by United Nations organizations, the World Economic Forum, the World Bank, and the OECD (Organization for Economic Cooperation and Development), this development model was supposed to be a win-win economic growth model since, in theory, it would integrate environmental safeguards and foster the social good. Despite initial good intentions, the weakness of this approach has been that it depends largely on voluntary 'political will', which has been in short supply. As stated in the report,

[...] sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs [and] must rest on political will (1987).

For a qualitative study on how educators in Egypt understand Digital Intelligence see al-Mousa 2024.

26 The seventeen SDGs address critical development challenges in areas including education, health, inequality, clean energy, and climate action. Goal 4 on 'Quality Education' seeks to 'Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all', see <https://globalgoals.org/goals/4-quality-education/>.

Since the concept of sustainable development entered the development lexicon, the world has undergone an extreme rise in inequality, job displacement, mass human migrations due to economic, security, and environmental factors, and precipitous degradation of the planet (Piketty 2014, Standing 2017, WWF 2024). Several alternative ideas and models of sustainable development are in circulation, such as the Other Davos, the BRICS-led New Development Bank, the World Social Forum, and the Blue Dot Network, to name a few. However, political elites in Egypt and most countries have for the most part rallied around a model of pro-growth sustainable development, often to detriment of people and the planet. Education systems are pushed to compete on the global stage where economic competitiveness takes precedence over well-being (Rizvi and Lingard 2009), and technology solutions and personal responsibility are prioritized over building social solidarity and shared sustainable futures (Herrera 2017).

Egypt Vision 2030 follows a standard model of pro-growth sustainable development. Its Pillar 7 focuses specifically on education and training for general and technical schools. The Key Performance Indicators (KPIs) in education range from developing a 'high quality education and training system' so that students and trainees will have the skills 'to compete with regional and international entities', to lowering the youth illiteracy rate to 0 and increasing Egypt's international education rankings (MOPMAR 2016: 172). Within the first few years of the Education 2.0 reforms, Egypt did indeed see some measurable increase in its rankings. According to the Global Knowledge Index (GKI) for example,²⁷ the country reached the 53rd position out of 154 countries in 2021, compared to 72nd position out of 138 countries in 2020 (Ministry of Planning and Economic Development 2023: 25). In the PIRLS 2021 assessment, Egypt achieved an increase of 48 points compared to its 2016 scores (with a placement of 37 out of 43 countries), equivalent to two years of learning gain. One analyst concludes that, 'While most countries suffered significant learning losses during COVID-19 [...] a few improved their scores. [...] Egypt is among the countries with improved achievement' and this is 'probably due to policy or system changes' (Patrinos et al. 2024: 5 and 17).

27 The Global Knowledge Index initiated in 2017, was developed by the United Nations Development Programme—Regional Bureau for Arab States (UNDP RBAS) and the Mohammed bin Rashid Al Maktoum Knowledge Foundation (MBRF). For more information see the UNDP website, <https://www.undp.org/arab-states/publications/global-knowledge-index-2024>

3. Digital Arab, Digital Africa

Egypt has been positioning itself across the Arab states and African continent as a vanguard of twenty-first century education in the domain of digital transformation. As early as 2018, Egypt partnered with Arab Gulf countries Saudi Arabia and Dubai to form the 'Arab Digital Union' to find ways of bringing together the Saudi Digital Library, Egypt's Knowledge Bank, and the Dubai Digital Library (see Fig. 1.2) (Government of Dubai 2018).²⁸



Fig. 1.2 Members of the 'Arab Digital Union' representing the Saudi Digital Library, Egypt's Knowledge Bank (Tarek Shawki center), and the Dubai Digital Library, 2018, Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Arab_Digital_Union.jpg#/media/File:Arab_Digital_Union.jpg

Egypt's Ministry of Education also initiated partnerships with education ministries and civil society groups in the African Union (AU) as they pursued policies towards 'Digital Africa'.²⁹ The AU's flagship report,

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- 28 The initiative for the Arab Digital Union was announced during the 2018 Knowledge Summit in Dubai, 'Youth and the Future of the Knowledge Economy'. It was organized by the Mohammed Bin Rashid Al Maktoum Knowledge Foundation (MBRF) (Government of Dubai 2018).
- 29 For example, in February of 2020 Egypt co-hosted the conference, 'Accelerating Learning in the Middle East and Africa: A Call to Action and Opportunities for Regional Collaboration', attended by dozens of ministers of education, policy makers, and civil society representatives, sector experts, and development partners from across MENA and Africa. The conference was under the auspices of the President of the Arab Republic of Egypt, the World Bank, and Egypt's

'The Digital Transformation Strategy for Africa 2020-2030', elaborates the need for developing 'technology-supported learning', 'creating and scaling-up eLearning platforms', and ensuring that 'digital knowledge products and learning opportunities reach people from diverse educational, social backgrounds and regions' (AU 2020: 23). The cover of the report is of a humble schoolgirl smiling as she uses a tablet in a remote mountainous area, an image that conveys the message that digitization will change the lives and learning of children across different social groups and environments (see Fig. 1.3).³⁰



Fig. 1.3 Cover of the *Digital Transformation Strategy for Africa* (Addis Ababa: African Union, 2020).

Minister of Education and Technical Education, and in collaboration with the United Kingdom's Foreign and Commonwealth Office (FCO). The author attended this conference and served as the moderator of the closing session, 'Accelerating Learning through Collaboration'. See <https://www.worldbank.org/en/events/2020/01/29/accelerating-learning-in-the-middle-east-and-africa>

30 The Sustainable Development Strategy for Africa 2063, 'Agenda 2063' was adopted in January 2015. This fifty-year blueprint and development vision is divided into five ten-year implementation plans with specific goals and targets including advancing its digital infrastructure (AU 2015).

As countries race towards digitization, AI, cloud computing, and smart technologies, they often overlook or downplay the risks. Concerns abound about how digitization can exacerbate inequality, cause environmental degradation through e-waste, energy consumption, and water pollution, and create dependency on foreign technologies and companies which result in colonial style extraction of data with related risks to national security, children's privacy, and digital surveillance (Coleman 2019, Moon 2018, Shao et al. 2025). But of equal if not greater importance is that architects and advocates of education reforms often do not acknowledge how digital transformation (DT) comes with 'both game-changing opportunities [...] and existential threats' (Sebastian et al., 2017:197). The integration of digital tools and technologies into education systems radically changes relationships, social learning, knowledge systems, and pedagogy, and carries profound ethical, political, and economic implications (Selwyn 2016 and 2025, Pangrazio and Selwyn 2023). As scholars of management and organizational theory posit, DT opens the door to

novel actors, structures, practices, values, and beliefs that change, threaten, replace or complement existing rules of the game within organizations, ecosystems, industries or fields....[T]he combined effects of digital innovations lead to the emergence of new organizational forms, new institutional infrastructure, and new institutional building blocks. [...] [D]igital transformation is without doubt, institutional change (Hinings, Gegenhuber and Greenwood 2018: 55, Greenwood and Hinings 1996).

Whereas digital transformation of education in 'normal times' would have taken years of deliberation to build public and political consensus, plan for institutional change and retraining, establish legal, and economic guardrails, with the COVID-19 pandemic it moved at breakneck speeds. This conversation shifted away from if and how digital solutions should be applied, towards a mode of rapid 'technological solutionism'.³¹

Schools in Egypt closed on 15 March 2020 and made the transition to online and hybrid learning.³² The country was relatively well prepared for this transition. In a press conference to announce the details of

31 The term 'technological solutionism' was coined by Evgeny Morozov (2013). It refers to an ideology that technology and engineering solutions can be efficiently used to solve complex problems without regard to history, culture, context, and politics, and without human debate.

32 According to UNESCO, over 1.5 billion students and youth worldwide were affected by school and university closures. The majority of governments from 133

how Egyptian education would continue the academic year remotely, Minister Shawki proclaimed: 'This is a unique experience in terms of learning. Besides getting us to the next year [...] I think we can transform the current crisis into a positive thing' (Shawki 2020a).

In rapid succession, the ministry launched six e-learning platforms and two educational television channels (Chapter 22). UNESCO recommended that schools adopt Edmodo, a 'free' platform with an interface similar to Facebook, as their Learning Management System (LMS). Edmodo allowed teachers to share content in virtual classroom spaces, distribute quizzes and assignments, and manage communication with students, colleagues, and parents. In 2019, the company reported that it had more than one hundred million users worldwide. It announced its partnership with Egypt through a Tweet on 19 March 2020 stating, 'Starting today, Edmodo will be rolled out to over 22+ million students and over 1+ million teachers in the country to provide distance learning support in the period of school suspension and to enhance learning thereafter' (PR Newswire 2020).³³ However, Edmodo would become a cautionary tale of what can happen when a national education system outsources educational services to a third party (Hill 2022). On 22 September 2022, Edmodo announced that it was shutting its operations and permanently deleting all accounts. It gave assurances that personal data would not be sold to third parties, yet this was a difficult claim to verify.³⁴

countries came up with a mix of online, television, and audio solutions (UNESCO 2022).

- 33 NetDragon's technology partner in the Middle East was Innovera, an EdTech technology manufacturing, application development, and healthcare software development company. The company made their resources 'available to support the MoE, schools and teachers with the training and helpdesk to ensure a smooth implementation and long-term usage of Edmodo within Egyptian schools' (PR Newswire 2020). Note that not all eligible students and teachers subscribed to the Edmodo platform. According to the minister, 11.5 million students, 1.16 million teachers, and 750,000 parents subscribed to it to access classes and deliver the student projects (Shawki 2020b).
- 34 The US government's Federal Trade Commission (FTC) brought a legal case against Edmodo for being in violation of The Children's Online Privacy Protection Act of 1998 (COPPA) and mishandling children's data. It reached a settlement of a \$6 million penalty and the FTC 'ordered Edmodo to delete models and algorithms developed using personal information collected from children without verifiable parental consent or school authorization, change a number of its practices, and adhere to the FTC's reporting requirements'. This order sent a clear message regarding the FTC's expectations for edtech providers, but applied specifically to the US (Lee and Marlowe 2023).

Egypt vigorously continues its digitization efforts. During the national launch of the ‘Digital Egypt’ platform which provides services for all citizens, President El Sisi spoke emphatically about the importance of education in the state’s goal of transforming Egypt into a ‘digital society’ (Chapter 23, SIS 2022).³⁵ In 2022, the Ministry of Education developed a draft ICT strategy to show how it envisioned an integrated system of synchronous and asynchronous learning with the EKB serving as the hub and a feedback loop whereby user data analytics would regularly be analyzed to update the system (see Fig. 1.4).³⁶

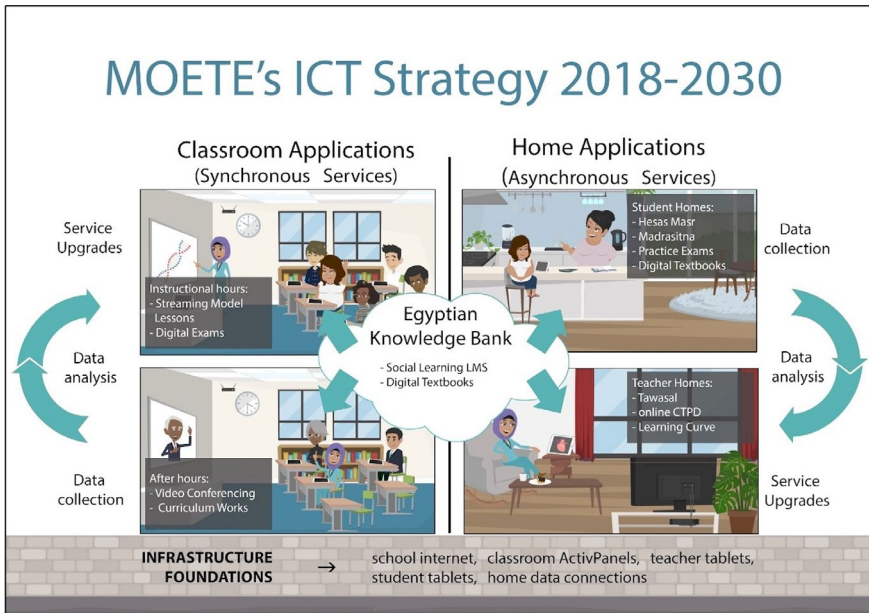


Fig. 1.4 Graphic explaining how to integrate technology into Egyptian education, from the MOETE's Draft ICT Strategy for 2018-2030.

By 2025, the ministry pivoted more towards AI and unveiled ‘Faheem’, Egypt’s first ‘AI-powered personalized learning platform,

35 For a full stream of the launch event, see ‘President El-Sisi inaugurates Ministry of Communications and IT projects “Digital Egypt”’, 6 July 2022, YouTube, <https://www.youtube.com/watch?v=whGEDX4Egpk&t=4s>

36 In the interest of full disclosure, the author worked on developing the MOETE ICT strategy in her role as an international education advisor of the USAID Teach for Tomorrow project. The project worked closely with the Deputy Ministry of Education Ahmed Daher in 2022 to craft the strategy.

designed to address critical limitations within the K–12 educational system', developed in collaboration with Microsoft. Employing the logic of technological solutionism, Faheem showcases technological and engineering solutions to challenges associated with crowded classrooms, teacher shortages, deficits in teacher education, and underperformance in student learning as measured by tests. AI is being presented as a means to 'operationalize policy goals set by Education Reform and UNESCO / UNICEF-aligned reforms, bridging the gap between technological potential and classroom realities' (Daher and Faheem Team 2025: 2). As elaborated in the Faheem report,

The AI mimics effective teacher strategies (aligned to the teaching standards) by posing questions, encouraging exploration, and providing scaffolded guidance that mirrors classroom interaction. This instructional approach is intended to foster greater motivation, build academic confidence, and support student autonomy' (Daher et al. 2025: 5).

The Faheem initiative serves as an example of how digital transformation is being implemented as a means of managing problems without grappling with the 'radical institutional change' that accompanies its use.

4. Oral Histories from the 'Top Down' and 'Bottom Up'

Oral sources tell us not just what people did, but what they wanted to do, what they believed they were doing, and what they now think they did (Portelli 2009).

This volume is based on oral histories, participant observation, and analysis of primary source materials collected during the first five years of the Education 2.0 reforms.³⁷ It interrogates how new ideas and practices concerning learning, pedagogy, knowledge production, and technology enter the public and political spheres and how local actors interpret, react to, and selectively adapt them, sometimes creating alternative ideas and practices along the way. It is divided into two sections. Part 1: Oral Histories of Education Policy Innovation and Change (Chapters 2 through 23) puts a spotlight on the leaders and architects of the new

³⁷ The research is the product of the Education 2.0 Research and Documentation Project under the direction of Linda Herrera and with the participation of authors and co-authors of chapters in this volume (see Acknowledgements).

education system and the changing EdTech landscape. Part II: Teacher and Student Perspectives, elevates voices and experiences from within schools and local communities (Chapters 24–29).

As a methodology, oral historical inquiries revolve around an event or period in history. The Oral History Association (OHA) describes it as ‘a field of study and a method of gathering, preserving and interpreting the voices and memories of people, communities, and participants in past events’ (OHA n.d.). For purposes of this study, the ‘past event’ refers to the first phase of the Education 2.0 reforms (2018–2023). The participants include figures involved in key decision making, experts who developed curricular frameworks and materials, engineers who built and ran the digital systems, and students, teachers, and parents who were at the receiving end of the reforms. While participants recount stories from the ‘past’, it is the recent past going back sometimes to 2014, and at other times to an event from months, weeks or days earlier.

Another common feature of oral history is that it usually draws out peoples’ stories and memories to construct a social history from the ‘bottom up’ (ElSadda and Sabea 2018, Masalha 2008, Portelli 1981 and 2009). In the context of this research, we view the ‘bottom up’ as reflected in the voices of students, teachers, parents, and other members of school communities (Chapters 24–29). However, oral history can also serve to build an historical record from the ‘top down’ by including people working at the ‘macro’ levels of government and international and multilateral organizations. Somewhere in the middle at the ‘meso’ level, are figures such as ministry officials and supervisors working in educational districts, and local experts involved in the reform efforts. These multi-level perspectives provide a level of depth and critical understanding missing in formal documents like sector strategies, policy reports, and impact assessments.

While formal documents serve an important function, they obscure the struggles that take place over ideas, policy choices, and economic decisions. Oral historian Patrick Sharma describes gaps and missing knowledge in the formal record as ‘information scarcity’. He argues, ‘Although written documents can often explain when or how an individual or an institution came to a particular decision, the crucial, behind-the-scenes maneuvering that precedes such choices is usually not written down’ (Sharma 2012; see further Chowdhury 2024, Hall et

al. 2021, Herrera and AbdelShafy 2020). Oral histories draw out opaque processes of state planning, policy change, and political decision making. This type of knowledge is essential when trying to understand how a particular policy came into being, and for purposes of assessing whether a policy needs correction, should be reinforced, or might be considered for sunseting .

In keeping with ethical research practice, all interviews followed standard conventions of informed consent (if a participant was under eighteen years of age, parents also provided their consent). Participants in Part I who spoke on the record had the option of reviewing, elaborating on, or withdrawing their edited interview. Several participants sat for follow-up interviews or took part in email exchanges to provide additional information. Excerpts of a select portion of these interviews are available in video form on YouTube as 'Education 2.0 Oral History Highlights' at <https://www.youtube.com/@education2-Egypt/videos>. They are also listed in the Companion Videos section at the end of relevant chapters. The interviews in Part II are all anonymized. Some of these chapters are based on longitudinal oral historical research that was ongoing for up to two years. All interviews have been edited for flow and clarity. This volume is organized in five sections as follows: the minister and his advisors, international cooperation, curriculum reform and private sector partnerships, digital transformation, and student and teacher voices.

4.1 The Minister and His Advisors (Chapters 2-9)

While serving as the Dean of the School of Sciences and Engineering at the American University in Cairo in 2014, Tarek Shawki was unexpectedly summoned by the President's office to chair the Specialized Presidential Council for Education and Scientific Research³⁸ (Chapter 2). He applied his engineering skills to study the education system, diagnose its problems,

38 President Abdel Fattah El Sisi issued Decree No. 60/2015 for the purpose of establishing four specialized councils to 'define State policies and prepare comprehensive studies of various national work'. Councils were established for Community Development, Education and Scientific Research, Economic Development, and Foreign Policy and National Security. The council of Education and Scientific Research was specifically tasked with advising on the overall education policy, providing support for technological research institutes, and proposing legislation for the establishment of new research centers (SIS 2015).

and offer solutions. An initial proposition was to create a new education governance model through an authority that could oversee all the parts of the system and ensure high standards of expertise (Chapter 3). He also proselytized for a digital knowledge project that would be available to all Egyptians (Chapter 4). During the inaugural National Youth Conference in Sharm El Sheikh in 2016, as he was waxing poetic on the need for a new education system to be built from the ground up, the President essentially appointed him to be the next Minister of Education and Technical Education on the spot. Shawki recalls the experience of being thrust into the political spotlight for the first time, dealing with a dissatisfied public, and building a pioneering knowledge infrastructure for all Egyptians. He was inspired by Taha Hussein who advocated for universal free education in the mid-twentieth century.³⁹ Shawki saw himself as also fighting for ‘free state-of-the art knowledge for all’ through the EKB. He reflects on his legacy, what he might have done differently, and how he was left with scars from battling in the political arena for five years (Chapter 2).

Regardless of its end, the initial years of trying to build a new education system were filled with energy and idealism. Shawki selected a team of advisors, ‘the dream team’, and told them to start reimagining education from a ‘blank page’. After coming up with a blueprint, his advisors Deena Boraie and Nelly El Zayat took the lead in liaising with different international and local partners to develop new curriculum frameworks and books starting with KG and the early primary years (Chapter 5 and Chapter 7). Boraie also worked on recalibrating assessments away from the one-shot high-stake exams. Though they made some inroads, she and the Minister were not able to radically change the Thanaweya Amma system in the ways they envisioned (Chapter 6).

With ‘inclusive education’ being a core pillar of the new system, the Minister’s Advisor for Special Needs Education Ingy Mashhur, led the Ministry’s first framework for students with special needs. Despite their best efforts, she raises concerns about the wide gap between legal and policy advances for children with special needs, and realities on

39 Taha Hussein (1889-1973), in addition to being one of the most influential writers and intellectuals of the Arab Renaissance, also served as the Minister of Public Instruction in Egypt from 1950-1952 where he advocated for free universal education. For an outstanding account of his role in educational institution building, see Ahmed 2021.

the ground where things are slow to change (Chapter 8). Meanwhile, the advisor for marketing and communication, Yousra Allam, worked on the ministry's communication strategy to reach different generations and groups. With the Minister as the key messenger, they spread the message of the reforms using print, television, and social media (Chapter 9). These advisors, who also happened to be female, had to balance the demands and unpredictability of government work where they were constantly 'putting out fires', with other full-time jobs, family life, and caring for children.

4.2 International Cooperation (Chapters 10-12)

Sector change in education involves a range of international cooperation. The World Bank provided the initial loan for the Education 2.0 reforms. Juan Manual Moreno and Amira Kazem oversaw the loan negotiations and administration of the loan, respectively. They explain the process involved in working with country-partners and push back against critiques that the Bank comes with an 'agenda' in education. They each recount that despite decades of discussions about changing the Thanaweya Amma exam and system, it has remained remarkably tenacious, making it the 'mother of all reforms' (Chapter 11 and Chapter 12).

UNICEF emerged as a partner early on as the Ministry adopted their Life Skills and Citizenship Education (LSCE) framework. Manar Sharouda, Education Specialist at the UNICEF Cairo office, was involved with the Education 2.0 planning from its inception. Though enthusiastic about the much-needed overhaul of Egypt's education system, she cautions that educational change cannot be pushed only from the top but must be coupled with a bottom-up approach where the school is the unit of reform (Chapter 10).

4.3 Curriculum Reform and Private Sector Partnerships (Chapters 13-17)

The Education 2.0 reforms represent the largest leap in curriculum development for the primary years since the establishment of the Center for Curriculum and Instructional Materials Development Center

(CCIMD) in 1989.⁴⁰ Under the direction of Dr. Nawal Shalaby, the Center's staff worked with private publishing companies to develop a new K-12 curriculum framework and ensure that the new books and digital content were up to international standards and adapted to the Egyptian context (Chapter 13). They partnered closely with Discovery Education for textbooks, Teacher's Guides, digital content, and Teacher Professional Development (TPD). Emily Waters, International Senior Project Director at Discovery Education, recounts the process of building teams and developing digital resources and books with Egyptian counterparts (Chapter 14).

National Geographic Learning joined the MOETE a couple of years into the reform to produce books for Grades 4-6 in the traditional subjects English and Social Studies, and to develop new subjects, Career Skills and Information and Communication Technology (ICT). The company brought their trademark high quality visuals to Egyptian textbooks. Tom Kelley, Cultural Expert for National Geographic Learning, reflects on how his team navigated the sensitivities inherent in working on a social studies curriculum, ways they identified source materials, and their productive relationship with their Egyptian counterparts at the CCIMD (Chapter 17).

Nahdet Misr, a leading publisher in Arabic children's books since 1938, worked with Tarek Shawki to deliver Arabic digital content for the EKB. They later developed the 2.0 textbooks for the subjects, Values and Respect for Others, the Arabic language, and religion. It was the first time a 'Muslim' press, was responsible for books for the two religions of Islam and Christianity which follow the same learning framework. A representative of Coptic Pope of Egypt Tawadros II of Alexandria personally oversaw the production of the Christianity books, and the Islam books received the approval from al-Azhar (Chapter 15). The company collaborated with language experts to develop a new methodology for teaching the Arabic language to bridge the gap between classical and colloquial Arabic. As recounted by Nevine El Souefi, CEO of the education consulting company Edupedia, the 'balanced approach' combines a holistic and

40 In 2023, the name of this department changed to the Central Department of Curriculum Development.

phonetic approach and makes reading more intuitive. Their goal was to improve reading levels and encourage children to enjoy reading (Chapter 16).

4.4 Digital Transformation (Chapters 18-23)

Digital transformation represents a cornerstone of the 'new education system'. The most pioneering initiative of this period was the Egyptian Knowledge Bank, the largest knowledge project ever attempted in Egypt. It provides free access to scientific publications for researchers and contributes to the production and dissemination of knowledge in Arabic. The private company LIMS coordinated the various EKB partners. Mahmoud Dawoud and Mahmoud Hussein of LIMS explain the evolution of the platform, how it grew to include K-12, and its positive impact on university rankings and knowledge production in Egypt and the Arab world. It indexed all Arabic language journals, including ones from al-Azhar university (Chapter 19). Mohamed El-Araby describes working with a team of engineers to build the platform from scratch, and recounts how they had to think on their feet during the COVID-19 pandemic when the platform needed to house the Ministry's learning management system for K-12 (Chapter 21). Representing the government sector, Majed M. Al Sadek, Head of the Egyptian National Scientific and Technical Information Network (ENSTINET) and Data Center Administrator at the EKB, oversaw issues related to data security, digital inequality, and financing, all of which required constant solutions. Whatever the challenges, he believes this project has forever changed education in Egypt, with far-reaching implications for not only Egypt, but the entire region (Chapter 20).

Digital transformation of education involves much more than the EKB. Ahmed Daher, Deputy Minister for Education for Information Technology, oversees ambitious state initiatives that are constantly evolving. The integration of ICT in education has generated, by design, demand for new goods and services. The government partnered with Samsung to establish a local factory to produce electronic goods like tablets that are used in schools. Daher has also overseen AI initiatives and in 2025 launched 'Faheem: An Intelligent Framework for Adaptive and Personalized Learning'. Prior to that, he oversaw the establishment

of the state-of-the art MOETE television studio which launched its own channels on YouTube and television (Chapter 18).

Mai Magdy, General Manager for the ministry's two channels Madrasatna 1 and Madrasatna 2, reflects on the responsibilities and rewards of working with public school teachers and producing videos for educational purposes. The videos are aired on local television frequencies and also posted on YouTube where they receive high viewership. She points to the need for more children's educational programming or 'entertaining education' (Chapter 22).

Taking a critical distance from the engineers and managers involved with digital projects, Hany Zayed examines the changing landscape of EdTech in Egypt. He raises pertinent questions about how education digitalization is spurring a private and unregulated EdTech landscape with new players, interests, scope, and rules, and asks what these portend for the future of education (Chapter 23).

4.5 Student and Teacher Voices (Chapters 24-29)

This section highlights the voices of students, teachers, and parents. The research for these chapters draws on longitudinal oral history interviews to gauge changes in attitudes, skills, and learning over time, combined with digital social research on social media platforms and content analysis of press conferences, laws, statistics, and reports.

Students who entered high school in 2018 made up the historic class of 2021. Their cohort was subject to novel experiments, including using government issued tablets, taking electronic exams, participating in hybrid learning and flipped classrooms, and managing their studies during a pandemic. The learning journeys of two students are profiled. Laila, who grew up in a low-income neighborhood on the edge of Cairo and attended government schools (Chapter 24) and Gamal, who lived in a professional middle-class neighborhood and attended a private boys' school (Chapter 26), both talk about how the ups and downs of being part of the experimental class. Despite wide fluctuations in their high school journeys, with all the setbacks and frustrations, they both point to the immense learning and breakthroughs that took place during their high school years.

After schools closed in March 2020 due to the pandemic, the MOETE decided that students in Grades 3-9 should do a research project in lieu of the end-of-year assessments. Chapter 25 considers 'The Rise, Fall, and Aftermath of Take-Home Research Projects'. Rather than judge this experiment in simple terms of 'success' or 'failure', the chapter considers how cultures of learning change, how behaviors that start online get adapted into offline culture, and how social solidarity forms around education problems. It also illustrates the remarkable agility and predatory nature of the informal education marketplace.

Chapter 27, 'Teachers in Search of Their Identity: A View from Ismailia during Times of Change,' profiles four teachers from urban and rural schools and probes how they view their profession. In a reform that sidelines teachers as it privileges technological change, 'teachers are struggling to prove their value and relevance [...] and are facing a challenging future'. Still, teachers find professional satisfaction, especially those working in rural communities.

During the pandemic, teachers' agility and problem solving were on full display. Chapter 29, 'A New Curriculum and a Pandemic: Primary Teachers' Strategies' explores how some teachers saw themselves as active agents of change rather than passive recipients of reforms. Still, they often lacked the kinds of professional support and training needed to ensure their well-being and the learning of their students. Other teachers took training matters into their own hands. Chapter 28, 'Primary School Teachers Leverage Social Media for Professional Development', uncovers how primary school teachers in Egypt have been using social media in innovative ways for informal peer-to-peer teacher professional development. The chapter highlights teachers' skills, communication, and artistic styles with attention to what they identify as their professional gaps and needs.

As this volume documents, there is much to learn from Egypt's historic, audacious, and oftentimes fraught educational experiment. No single reform, no matter how visionary, well intentioned, or far reaching can begin to 'fix' or even scratch the surface of the range of overwhelming and constant challenges in education. Due to a complex set of factors, the reforms were ultimately neither able to deliver on all their promises, nor continue to their logical conclusion, though they invariably drove change and forms of 'transformation', especially in the realm of technology. The

intended and unintended directions of change, to whose benefit, and at what costs, remain open questions that are probed in this volume and will surely occupy researchers for years to come.

Whatever lessons we learn and critiques we raise, education research reminds us that we cannot afford to turn to cynicism, throw up our hands in exasperation and lose hope and direction. The overwhelming fact remains that scores of people go to great lengths and make enormous sacrifices to be educated. Communities fall into the deepest of despair when their education systems and infrastructures are weak, or even worse, when they fall victim to deliberate attacks and destruction. Some of the most egregious examples of schools, teachers, and students being intentionally targeted in ways that deny them education and life can be found in occupied Palestine, which is undergoing unspeakable anguish at the time of writing.⁴¹ In a rapidly changing, oftentimes harsh and unpredictable world, we must continue to learn from the past, evaluate the present systems, and strive for a social contract in education oriented towards human dignity, universal principles of respect for all forms of life, and genuinely sustainable futures, for our collective survival depends on it.

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41 The most extreme and egregious case has been in Gaza, where the Israeli occupying forces have engaged in the systematic destruction of the Palestinian education system through an intentional practice of 'scholasticide'. Coined by Karma Nabulsi in 2009, the term refers to 'the systemic obliteration of education through the arrest, detention or killing of teachers, students and staff, and the destruction of educational infrastructure' (United Nations Human Rights Commission 2024). For more information, see Scholars Against War 2024, Dader et al. 2024.

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PART I

ORAL HISTORIES OF EDUCATION POLICY INNOVATION AND CHANGE

2. Becoming and Being the Minister of Education: Interview with Tarek Shawki

*Linda Herrera*¹

Abstract

Tarek Shawki was unexpectedly called into government service to chair the Specialized Presidential Council for Education and Scientific Research while he was Dean of the School of Sciences and Engineering at the American University in Cairo. In 2017, the president appointed him Minister of Education and Technical Education to lead a comprehensive national education reform, 'Education 2.0'. Shawki recalls his own quality public education in Egypt and Syria in the 1960s and 1970s, and his desire to bring that caliber back to twenty-first century Egypt. Inspired by Taha Hussein, a pioneering minister of education and man of letters from the past century, Shawki's goal was to provide all Egyptians, regardless of their social class, gender, or location, a state-of-the-art quality public education. He recounts the challenges of working in a large state bureaucracy resistant to change, and his attempts to manage an often volatile public on social media. After leaving the position in 2023, he reflects on what he might have done differently and what he learned about Egyptian society.

Keywords

Education 2.0, Minister of Education, Egyptian parliament, politics of education, social media, Taha Hussein

1 This interview is based on two interviews conducted by Linda Herrera on 7 September 2022 in Cairo, and on 7 March 2024 via Zoom.

1. Becoming Minister of Education

LH In 2014, you were Dean of the School of Sciences and Engineering at the American University of Cairo. How did you become involved in governmental work in education and scientific research? What was the process?

TS² I don't know how (laughs). Life was very normal away from the public. Up to age fifty-seven, I did not have anything whatsoever to do with public life. But one day in August 2014, just two months after president El-Sisi was sworn into office, I got a call on my mobile. I was in Alexandria for the night with my family. The guy on the line said, 'I am from the President's office'. I thought it was the wrong number. I was like, 'Who are you calling?' He mentioned my name. I thought maybe it was a mix-up and he was looking for someone else with the same name. He said it was no mix-up and that they wanted to meet with me the next day. I asked who exactly wanted to meet me? He said he did not know, he was only supposed to give me this message. He named a hotel in Cairo and said I should be there at 7:00 p.m. the next day. I told him I was in Alexandria and he said, 'Sir, you must be here in Cairo tomorrow at 7:00 p.m.'. When I hung up I was still thinking it must have been a scam. But my daughter said, 'Dad, we are going home anyway, so why don't you go?' I said ok, and I went.

I met two young men in civilian clothes, but they were officers. They told me that the President was putting together his think tanks which included advisory groups for education and scientific research, economics, national security, and social affairs. They wanted me to chair the education and scientific research group, for the Presidential Council. I asked, 'Who are you? Who picked me? How? I don't know you. Why me?' They said, 'No, we know everything about you'. And actually, the scary thing is that they really did. Until now, I do not know how they chose me. They also chose eleven other members for that advisory group. I didn't choose them. I chaired that group on a part-time basis. It was not a job, it was a kind of national service. I kept my position at the American University in Cairo and used to go to the group about once a week.

2 Tarek Shawki served as Egypt's Minister of Education and Technical Education from 2017-2022. For a detailed overview of Dr. Tarek Shawki's professional career, see his LinkedIn profile at <https://www.linkedin.com/in/tarek-shawki-0059025/?originalSubdomain=eg>

LH When did you first discuss your ideas about education reform with the President? What ideas did you present to him?

TS The first time I saw the President, which was the first time I saw any president for that matter, was when he met that advisory group. I was Chair of the Specialized Presidential Council for Education and Scientific Research.³ He came to ask us our thoughts about the education system. I said, 'It sucks'. He laughed. He was not used to that kind of talk. I continued by saying, 'Education used to be good, but not anymore. Now we are really low in the rankings. Education gives people a status, but it is not about learning'. He asked how we could fix that and I told him I didn't know, but spoke honestly and shared my opinions, as did others in the group. I told him I wished we had the education I had forty years ago.

I said, 'All I know is the level of education I got was perfect. But the system has been in decline from 1980 until today'. I explained how many other countries like Singapore, Korea, Japan, and Finland invested in their education systems during the same period and they improved, became excellent. I told him that I could not accept that we were in the lower bottom in the international rankings. I was insisting that we had to do better, we could do better. I also talked about how the world has changed and the purpose of education has changed. I was talking freely about big dreams.

I argued that it is easier to build something new rather than fix something old. I gave the analogy of the old building. You can fix the balcony, but then you find problems with leaky pipes. You fix those, but then you realize the electricity is not working. All these repairs end up being a waste of money because in the end the building is not inhabitable. I told him, 'Let us build something new with a new dream,

3 President Abdel Fattah El Sisi issued Decree No. 60/2015 for the purpose of establishing four specialized councils to 'define State policies and prepare comprehensive studies of various national work'. Councils were established for Community Development, Education and Scientific Research, Economic Development, and Foreign Policy and National Security (SIS 2015). The members appointed to the Specialized Council for Education and Scientific Research were Dr. Tarek Galal Shawki (Chair), Joyce Gamal Rafla, Dr. Amal Mohamed Kamal, Dr. Ahmed Mohamed Hosny Al-Hawy, Dr. Hoda Mohamed Farid Abu Shadi, Dr. Raida Mohamed Ahmed Abd al-Karim, Dr. Tamer Mohamed Abdelfatah Al-Nady, Dr. Ashraf Hamed Moussa Shaalan, Dr. Nivine Mohamed Alsayed Khaled, Dr. Malak Zaalouk, and Dr. Hesham Ezzat Eldeeb.

a new World Trade Center'. I said that it would be a long-term project because we have to rebuild the foundation from the ground up. The World Trade Center will have fourteen stories from kindergarten to Grade 12, and we have to bear through that. That was the birth of the concept of Education 2.0. The new building, the new dream. He spent four hours at that meeting, listening to whatever ideas we threw at him. During our second meeting, I talked about the idea of the Egyptian Knowledge Bank (EKB) (see Chapter 4 in this volume).

LH At what point did you learn that you were being considered for the position of Minister of Education?

TS It started in the first youth conference in Sharm el-Sheikh in October 2016. I was on a panel with the then Minister of Education El Helali el Sherbini, the minister of higher education, and Dr. Ahmed Okasha, a famous psychologist.⁴ I was very passionate and was saying that even despite Egypt's really low rankings, we could do something and leapfrog. We could be an inspiring model for other countries, and so on. I was talking about the idea of Education 2.0. The event was being televised live and the President was sitting in the front row. He picked up the microphone, looked back to the audience and said, 'You know, there are people on this panel who are saying amazing things. And I asked them to do this twice and they refused'. I wondered who he was talking about. I looked around and there were those two ministers and Dr. Okasha. He could not mean Dr. Okasha. Was he talking about me. I was not sure how to interpret this statement. Was it a compliment, or was he angry?

After the panel, I called an important guy in the President's office and asked what he meant by that comment. He said, 'The President meant that we asked you twice', meaning, to be the minister. I once told

4 Dr. Ahmed Okasha is an internationally known psychiatrist from Ain Shams University, Faculty of Medicine (MB, MSc, M.D., and Ph.D). He was the founder and honorary chairman of the Institute of Psychiatry at Ain Shams University, Professor and Director of the World Health Organization (WHO) Collaborating Center for Training and Research in Mental Health, Institute of Psychiatry, Ain Shams University, Member of the Expert Advisory Panel in Mental Health – WHO – Geneva, President of the Egyptian Psychiatric Association, President Arab Federation of Psychiatrists, Honorary President World Psychiatric Association, Honorary Fellow of World Psychiatric Association (2005), among many other prestigious positions.

the President I did not want to be in the government, I just wanted to work on the idea of Education 2.0. I told this guy, 'We were just chatting'. He replied, 'Does that mean you accept?' I told him I did not mean that either. He said 'Thank-you', and hung up. Apparently they considered this conversation to be a 'yes', because the next morning I was invited by the prime minister for an interview. I told the prime minister I had never worked in the government before, that I was not a politician and did not know anything about how to handle public work. I was direct about how I did not know or care about bureaucracy, red tape, signing papers, and all that stuff. I am really someone who is good at the idea level. He said, 'Don't worry, we will help you'. So, on February 14, 2017, I was sworn in as the Minister of Education and Technical Education and brought to this job. But to answer your question of how I got there, it was their choice. There are still two questions I do not think I will ever entirely know the answers to so I have to live with that mystery: One, how did they choose me in the first place?; And two, what happened to say enough was enough at the other side of it? (see Fig. 2.1)



Fig. 2.1 Tarek Shawki, Minister of Education and Technical Education, giving a press conference, 2020, Cairo, Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Tarek_Shawki-2020-MOETE.jpg#/media/File:Tarek_Shawki-2020-MOETE.jpg

2. The Education of an Education Minister

LH How do you think your upbringing and schooling prepared you for the role of Minister of Education?

TS I have to start with my grandfather. As a child, my best day of the week was Thursday because my parents would take me to sleep over at my grandparent's house for the weekend. I was their oldest grandchild and they used to treat me very special. Their house was filled with books. They had more books than chairs or tables or anything. There were libraries everywhere. I remember my grandfather would take my hand and and say, 'We are going to have a great time now'. We weren't going to Disneyland or something like that, no, we would read and talk about a book. One cabinet was filled with books by Taha Hussein, a very famous writer and a former Minister of Education (1950-1952). We read some of those together. You have to realize that my grandfather passed away when I was eight, so anything I remember about him was when I was really young. I was a product of Egyptian government schools of the sixties. I was able to read and understand Taha Hussein and other writers, though it was heavy language in formal Arabic.

My grandad had a High School diploma which at that time was a high level of education. I think he worked in a bank, but he was incredibly educated. He used to do Arabic calligraphy very eloquently and write notes for me to understand mathematics and science. He was an expert in everything. He would also take me out on outings. He was a very formal guy. He would take me out with a suit and a tie and I would have to tuck in my shirt really tight and be proper. But I had a lot of fun, believe it or not. I remember he took me to the Museum of Railways. He told me stories about how trains work, how they stop, how the signals go, things like that. Then he might buy me a small plastic train as a gift or something. Then we would go back home for lunch. He used to tell me a children's story before we took our nap in the middle of the day. That was the dessert. We were always reading. And before I left, he would give me a book and tell me to read it and tell him about it when I returned the next weekend. This was all education.

My father was the second big influence on my education. He was a professor of engineering, a true scholar. This man was researching all his life. He would research things outside his field like the history

of Arab civilization in science and math. Our house was loaded with manuscripts and microfilms. He used to sit at his desk with his robe over his pajamas, very proper. We had to knock at the door before entering his study to make sure we were not interrupting anything. He did everything by hand. He had an amazing library of his own handwritten lecture notes on every aspect of engineering. I remember him cutting cards to make a classification system of the origin of words in the Arabic language. He traced some words to Turkish, or other languages. He had great handwriting like his dad, and used to write with a simple pencil. He was a perfectionist.

LH In what ways did your mother influence your education?

TS At that time, girls used to marry very young. My mom got married when she was seventeen. I think she left school at Grade 11. It was very impressive that she spoke four languages, Arabic, English, French, and German. This era of government education in Egypt produced people who were highly educated. My mom had the ability to learn through her life, what we now call lifelong learning. She became an expert in engineering and manuscripts and she used to brag about Dad's work to our guests. She learned everything. She went with my father to Germany, to Syria, to Qatar. She kept saying, 'I learned a lot from your dad'. She meant the perfection, the organization, the management. My mom was the social master so she complimented my dad socially.

LH What types of schools did you attend?

TS I went to a government school in Egypt until Grade 8. My father took a job in Syria and I was there from Grades 9 to 12. We returned to Egypt and I studied mechanical engineering at Cairo University between 1974 to 1979. The exposure to different systems as a child taught me how to accept differences, how to survive in new places. I figured out fast that being at the top of my class in Egypt, did not mean I would be the top of my class in Syria. I remember that I found Arabic very difficult. It was much heavier than the level I had in Egypt, and the math was like twice the content. But, my mother helped me a lot, especially with the Arabic. And it was in Syria where my father discovered manuscripts and got this hobby kicking.

I will tell you a funny story. When I was in Grade 11, we were living in Syria and I became the top student in mathematics at the national level. I was very proud and went to my dad to show him my paper. I said, 'Dad, guess what, I got fifty-eight out of sixty in math and I'm the top of the nation here in mathematics'. He held the paper, looked at it, tore it in several pieces and threw it in the garbage. I looked at him speechless and said 'Dad, I got fifty-eight out of sixty'. He said. Yeah, pick it up'. He had me sit on my knees and pick up the shreds of paper and said, 'Put them on the table'. I asked him what was wrong. He said 'When you wrote this paper did you write your name?' I could not follow what he meant? I said 'Yeah, of course'. He said, 'Did you write your full name?' Meaning my dad's and grandfather's names. I told him, 'Of course'. He said, 'The next time you write your family name, respect it'. I asked how did I not respect it? He said, 'Look at your handwriting. That is not a proper handwriting. Remember next time you write your name that this is our family's honor'. That has nothing to do with mathematics but it was a lesson I never forgot. It is about perfection. He taught me about doing everything properly. That is why I like pens. I like calligraphy and those sorts of things (Fig. 2.2). That was all in the 1960s and early 1970s. Between him and my granddad, I learned that being a respectable man was all about knowledge, about how educated you are, what you know, what you can do. If I wanted to impress them, I had to read more, to know more, to be disciplined, to do everything to perfection.



Fig. 2.2 A custom-made Mont Blanc fountain pen with the signature of Tarek Shawki on the nib. Photo courtesy of Tarek Shawki, 2022.

LH You studied engineering up to the level of the Ph.D. How did you apply your training as an engineer to your job as Minister of Education?

TS There is something about engineering in general, whichever field of engineering, which is the logical thinking, the sequential approach to things. I give credit to my undergraduate engineering at Cairo University and graduate studies at Brown University for giving me a structured mind, teaching me the art of how to describe a problem, model it, then solve it. Talking about a problem is one thing, but solving it is a very different thing. Engineers do not stop at describing a problem. They always think of how to solve it. What are the boundary conditions? It's that structured mind that you apply to everything in life, and I tried to apply it to education reform.

LH Are there certain philosophers or public figures who influenced your ideas about education?

TS I was lucky to be born in late 1950s and to grow up in the early 1960s and 1970s. Egypt had a lot of great minds at that time and they used to write in the newspapers. When you flipped through the paper you would find articles by Taha Hussein, Tawfik Al-Hakim, great writers. The style of language and depth of analysis was equally great. We really had great talents in writing, arts, and music. The popular songs of the day had lyrics that were heavy poetry. Everybody listened to them easily. And these were the products of our free education system which was very highly ranked at that time. Our teachers were quite knowledgeable and good educators. Our faculties and colleges were equally good. All this influenced a whole generation.

Regarding education, Taha Hussein was famous for defending the right to education and free education. He was battling for an equitable society where the poor and rich would have the same rights and access to education. This was happening during the transition from the monarchy to the new republic. Education was in good shape in terms of the teachers and the content.

Apart from the great writers and artists, I was influenced actually by my own teachers. They were great educators and were passionate. They were not employees. They were not talking about money and private tutoring. No, they knew their responsibilities and how to have an impact on kids. I remember my teachers until now. Thank-you is not enough for them.

3. Leading a National Reform

LH You began your role as Minister of Education in 2017 with the intention of what you have called ‘transforming’ the education system. You have talked about how you wanted to start from a blank page and design a new system from scratch. What assumptions at that time did you make about what needed to be changed?

TS In the beginning we thought rightfully, that Egypt needed an education transformation. We worked on the assumption that people wanted a better learning environment and that parents wanted their kids to have better skills. One of the things that really concerned us was the high number of kids who could not read. We wanted to create a learning environment away from the obsession with tests and grades. We started by building a curriculum framework and developing the learning materials. We worked on the complete integration of a digital counterpart. We did the teacher training. For high school, we provided tablets to incoming Grade 10 students and did electronic exams. We thought parents would cheer us. But we soon learned that we were not thinking along the same lines as them at all. They were not appreciating the value of what we were giving them. Parents were angry because we were giving them one thing, while they wanted something else. For instance, in 2018, after we deployed the first set of new textbooks for KG1, KG2, and Grade 1, we were surprised to learn that people did not seem to be interested in this at all. They talked negatively about the size of the book, the number of lessons. I think we made some errors in our assumptions about the cultural scene and the priorities of parents with respect to how they viewed education and learning. That was our miscalculation.

LH How were parents thinking about their children’s education? What were their priorities?

TS They were talking more about infrastructure issues like the distance to school and the condition of the facilities, not about learning and skills. They wanted their kids to pass through the system but did not care about what they learned. If we had understood how the concept of learning had really been erased, we would have done things differently. Before putting pen to paper, we should have engaged them in a dialogue, even if it took three years. I think we should have done surveys, asked

people what they really wanted, and reached a point where in the last survey people would just be begging us for reform. The rest would have gone the same way. I mean, before you impose a traffic law, you have to convince people why it is good for them, otherwise they will look around and break the rule as long as they do not get caught. The same mentality is in education.

LH Do you mean to say that it was not the right approach to start from a blank page, that you should have entered into a more consultative process from the start?

TS No, it was the right approach but it needed a break-in period to get in the minds of people. It is like being sick and going to the doctor. If the doctor gives you medicine when you ask to cure an illness, you accept it. People needed to know that the system was ailing. I should have gotten them to the point of asking for the medicine. But we gave them the medicine without them knowing they were sick. They were spitting it out. I think we were just too quick.

We needed to address the cultural understanding of schooling and to convince every parent that their kids should go to school to learn, not just to get a degree and a status. The learning is what should be the measure of success. When parents prioritize having their kids get that degree in the shortest route possible, this opens the door for a lot of corruption like cheating and automatically passing kids, even when they cannot read. And I know Egyptian kids are very intelligent. They do not lack anything. It is just that they use their intelligence in the wrong things. Take cheating for example. They used to spend maybe two days writing equations and formulas in the smallest handwriting. That takes incredible effort. And you want to say, 'Was it not easier to study the lesson? You are smart enough to do it'. Now they are doing clever things using technology. They hacked the tablet in ways that were really genius. So I tried to tell them, 'You are smart enough to hack the tablet. So now, read your book please'. But it's a culture. I am not attacking anybody. No, I actually feel bad for the kids. Nobody is telling them that they are really good. But they need discipline and a lot of work to compete outside. And it is not the ministry alone that can do that. There has to be a national effort to get this through their heads.

LH If you could start over, knowing what you know now, what would you do differently?

TS If we were to do it again, we would spend more time on communication with parents, at least with the moms. We did not spend the time to tell people why we were doing this, we just gave them the solution. But we were also under pressure to move fast. Egypt has really been stagnant for over thirty years, and the President was in a hurry. He wanted to make up for the lost time. In certain things like infrastructure projects, speed works. But in things that touch humans, like education, it takes more time.

LH When you arrived at the Ministry of Education, did you find allies, people who were aligned with your ideas for change?

TS Actually, I found people with a very different mindset. And they saw me as an outsider. A lot of people thought I was a foreign guy. They were very surprised when I told them I got educated in government schools in Egypt and Syria. They asked, 'Really? We thought you were born in America'. That shows you the distance. It was not the way I looked, but what I said. They said I talked like an American. They thought I must have done this reform in other countries. They kept saying we could not copy it here. This of course was not the case. But I would ask them, 'Don't you want to be as good as the American kids, or Singaporean kids? Don't you want our kids to have the skills of Chinese kids? They can make better cars and better phones. I am really jealous. We have to compete with those guys. You cannot just sit still'. But they resisted change.

I remember in 2017, three months after being on the job, I met the President. He asked, 'Okay, I left you for three months. Tell me, how is it going?' I said, 'You know, if the building I entered everyday did not have a banner with the words "Ministry of Education", I would not have known where I was. Because people in there talk about anything but education'. He was surprised. I explained that they talk about promotions, raises, overtime, and stuff like that. There was not a group inside the ministry I could meet with to talk about education. This was a problem. I had to bring people from outside. And the people I brought,

advisors like Deena (Boraie) and Nelly (Elzayat), looked like foreign entities to those permanently tenured people (see Chapters 5-7).

LH Did you try to work on developing the capacity of government employees in the education bureaucracy?

TS The people inside the ministry wanted to do things the old way. That is all they knew. In fact, I did not find ‘educators’ inside the ministry. I did however find people I could work with in the government centers for curriculum development (Center for Curriculum and Instructional Materials Development-CCIMD) and assessment and examinations (National Center for Examination and Educational Evaluation-NCEEE). Both centers have grown tremendously. I also brought in a deputy minister, Dr. Ahmed Daher, who is an IT guy who understands the partners and the issues (see Chapter 18). I think there is enough know-how now in the ministry, the CCIMD, and the NCEEE, to move the reform forward.

LH Given that you could not find the necessary expertise or like-minded colleagues inside the ministry, how did you carry out this national reform? Who did you find to do the heavy lifting needed to change the education system?

TS I sub-contracted different components of the reform to different bodies. For example, we contracted Discovery, Nahdet Misr, National Geographic, Pearson, and other digital partners. I got pushback for this. People would ask, ‘Why do you pay so much money to Discovery?’ I would ask back, ‘What is so much and what is so little? What is your benchmark?’ It is like we are buying vegetables from the supermarket. I would say that whatever you pay those people, it is little compared to the scope of the impact. These experts have a know-how that very few people have. We worked with them to put together a curriculum framework and a coherent series of books. And once we publish a book, many generations, millions of students, will use it. The price we pay per head is almost zero. Building those courses was the best use of money. Some people came with nationalist ideas saying, ‘We are Egyptians. We are the descendants of Pharaohs. We can do everything. We do not need anybody’. But at the time, we did not have this expertise. We needed outside help, and now, we are better prepared. As I said, the NCEEE and

CCIMD are much stronger now and able to carry out much of the work (see Chapter 13).

LH You became known for implementing the reforms at scale without piloting. This applied to distributing the tablets to all students entering Grade 10 and deploying a new 2.0 curriculum in all schools. What are some of the lessons you learned? Looking back, do you think you should have started gradually and done some piloting?

TS Throughout this reform, I learned a lot about Egyptian psychology. For instance, the first year we distributed tablets to the kids (in 2018) it was a huge expense. If you get 700,000 kids and give them each a 300 dollar device, that is a lot of money. But they were taking the tablet without even saying thank you. They did not even ask what it was for. Someone wrote to me on Facebook saying that if you understood the Egyptian psychology, you would have chosen 100 schools, given them special names to show these were the distinguished schools, and only distributed the tablets there. You would have had everyone else begging for them.

The same might have been true for Education 2.0. When we first introduced the 2.0 system (in Grades KG1, KG2, and Grade 1), parents reacted as if we were forcing something on them. Egyptians hate that. We got the reaction, 'You did not ask me if I wanted this, so now I am going to be a critic. I am going to tell you what is wrong with it'. But if we had selectively and purposefully chosen certain schools to deploy 2.0, given them a special name to show some distinction, not as a pilot but as a tactic, parents may have asked for it, maybe. Because it is a psychological thing.

LH What did you learn about Egyptian society through this experience?

TS First, I saw that Egyptian society has totally changed since the 1960s and 1970s when I was growing up. It is as if Egyptian culture and the society has turned upside down. I was in a public school in Egypt as a child, but the environment was different. People were reading books and talking about knowledge very proudly. That is not the case today. I mean today, seeing a young person with a book is a rare scene. There has also been a change in the sense of being Egyptian. Young people today do not feel loyalty or a sense of belonging to the country as we did at their age. Very few of them talk about a purpose. They are more

focused on building their own success. And that has to be accounted for when you want to rebuild something like the education system. Since the 1980s, education has been on a steep decline.

I also know that Egyptians are very smart people and they really care about education. But they just hate to be bound to rules. They are also emotional people. But the majority never learn how to address things objectively. They address them in love and hate terms. I also find they have a very competitive nature. If you look at football for example, they get really angry if they lose to another country and so on. I tried to trigger that good side about being competitive, with the message that they have to work for their goals. But the current generation wants a quick way. Every twenty-five-year-old wants to be a CEO, be rich, have a villa. But I ask them, 'Have you done your homework or not?' You have to work for this success. We need to work to make Egypt more competitive.

4. Dealing with Social Media

LH From the start of the reform, people were making a lot of noise on social media, whether Facebook, WhatsApp, or other platforms. What was it like to be on the receiving end of an essentially non-stop chorus of voices on social media, much of it critical?

TS Those five years showed me stuff about Egypt, about the people, the culture, that I could never have imagined. I was happier not knowing. I was told when I was young about how kind and nice and courteous Egyptians are, but I saw a different reality. In this time and age, I saw people who were very rough, extremely rough. Before being a minister, no one ever cursed me, or made personal insults about my family. I was never attacked by random people. Once I became minister, people were very quick to use foul language, to attack me just because I differed from them. It was very hard to be on the receiving side of that.

The teachers were the most aggressive. They were nasty beyond my imagination. From what I saw, they do not care about the country or the kids. They are out to protect their own interests. I once said that at least 75% of teachers needed to be fired. We need new blood here, cleaner. These are the people raising our children. They have to be ethical, they have to love their country, and they have to talk about kids and learning, not only about money and private tutoring and raises.

LH You were known for answering your critics and engaging in conversation with members of the public online. How involved were you on social media?

TS People added me to groups which are active 24/7. Overall, I was in 3,000 WhatsApp groups. I felt I had to engage and answer their questions. But the more I answered, the more they attacked me and the nastier they were. Facebook was the same. It is filled with people with plenty of free time whose purpose is to just keep whining. It is a psychological disease. They constantly criticize but they offer no solutions. And people, when they do not like something, they just raise their voices in the nastiest way. It is like a tactic. They make enough noise to achieve what they want, even if it is not the right thing, like cheating on the exam or dropping half the contents of the book. They just keep making noise until the system gives in. I unfollowed many of the nonsense pages to get my sanity back.

LH It is hard to gauge real public opinion through social media. A minority on social media can make a lot of noise. Do you have a sense of the proportion of society that opposed or supported what you were doing?

TS That is a big question, whether it was a minority or a majority that opposed the reform. The day after the change of cabinet when I was removed, there was a wave of support for me on social media. So you wonder, why were these people quiet for five years? Were they afraid because the negative voices were pushed by professionals, meaning that if anybody said a positive thing they would be harassed and trolled and this would stop them from speaking? When the change of minister happened (on 13 August 2022), they started speaking up. They said, 'No, we want the reform. We finally had the dream. We were going in the right direction'. But another question is, how many people appreciate the change and really understand it? Five percent, fifteen percent, twenty percent? We simply do not know.

LH Do you think your removal from office had to do with pressure coming from teachers or parents on social media?

TS Parents put pressure on the political system, they asked for a change. The interest groups, the teachers, also resisted as usual, but parents were number one. If the majority of parents really wanted reform, they would

have kept the political support going. We needed to have them on our side. At the time, there was a lot of noise around the Grade 4 exams. We didn't hear too much from parents in the first three years (Grades 1-3) because there were no exams. The kids were passing automatically. We tried to have a dialogue with the public to say that the exam was not the objective at all, but people were up in arms. The exams are the monsters. People worship exams. A lot of this pushback happened in social media. Some of this was spontaneous and genuine, but there was also organized activity, those who managed social media in a professional way to make sure that certain things were shared widely and certain opinions spread. So, social media was not helpful. If we had done the reform in a world without social media we could have lasted longer. It was a weapon used by smart people against us. So, that is one part.

5. Being in the Political Arena

LH You entered the ministry as a lay person who had not previously held a position in government. How did you manage being in the political arena?

TS Sometimes it is better to speak to people without the government hat. I learned that once you are in the government, people consider you the enemy, or they suspect you are the enemy. When I came to the ministry I really did not know much about politics. The fact that I lacked the political dimension was a surprise even to the enemies. They thought I might have a devious plan, which I did not. But there are lots of things you have to pay attention to. There were the people who were adversely affected by the reform, the tenants of the old building who did not want to move to the World Trade Center, people whose income would shrink because of the new building. I am talking about all the interest groups who were fighting the reforms from the start. The people who print books got angry when we made books digital. The people who give private tutoring were angry that we provided electronic platforms and alternatives. When we started electronic exams to replace hand grading, some people got upset because they lost perks that came with hand grading, and so on. I had to face teacher unions and teacher groups and interests. The more we pushed the reforms, the more resistance that appeared. I did not come equipped with that political part.

LH You were called to the parliament on different occasions to answer questions about the reform. What did those experiences reveal about the political environment?

TS I remember one occasion when the parliament called me to a session to ask about the new books. There was a lesson about adaptation to the environment, a very well done lesson that shows kids how to observe nature like a scientist. It shows how reptiles behave in the desert and how their skin color changes when they stand in the heat. There are also examples of fish, bats, and penguins. For a child, if you poke their curiosity, they become really into it. We also provided digital companions to the lessons like movies the teacher can show in class. This book was state-of-the art. It had been taught in thirty-seven states in the US, and was customized to our environment by our own curriculum center from a curriculum framework and life skills standpoint.

So in the parliament, when the mics and cameras were turned on, one of the parliamentarians held up the book like it was a sack of potatoes and cried out, 'Is this a book for a child?' The implication was that the book was too thick, or that there was too much content for a child. Another person flashed the science book at me and said very upset, 'Why, for God's sake, do you teach penguins? Do we have penguins in Egypt?' I just did not know what to say. And she went further; 'What possible benefit is there for my child to know whether a penguin has four or five fingers?' I stood there watching this, reflecting on what it meant. This was a sample of society. This person had never studied the book, did not speak with any knowledge of learning or pedagogy. She was simply mimicking what her constituency was saying, she was transmitting something. And that was what needed to be fixed.

LH On 13 August 2022 there was a Cabinet reshuffle and the President replaced thirteen ministers, including you as the Minister of Education and Technical Education. Why do you think he replaced you at that particular point in time?

TS The President supported our education reform for over five years. I do not think any other president would accept a project like this. He did accept it, and I was crazy enough to do it. But there was a limit. In the

end, what happened was that the forces against me managed to cluster in such a way that I was presented as a political liability and there was pressure to remove me. The argument was that in order to 'comfort the street' we had to change the faces of the people in the office. 'Comfort the street' is code for giving up a good cause because people are not ready for it. The political leader cannot nurse the dream if it means losing his job. He must have reached the conclusion that people do not want to learn. It seems he lost patience as he had many other problems. Still, it is a shame because people lost an opportunity which does not happen often.

LH Did the President ever explain his decision to you?

TS No, not directly. But shortly after the cabinet reshuffle at an event organized by the Ministry of Communication on digitization, the President made a comment in public that was a surprise. He took the microphone and said, addressing the people, 'You all wanted to reform education. And I got the guy to do it for you. You pounded him on the head. You almost killed him. What do you want? Do you want to learn?' He said it just like that. At the time, it was not clear whether he was saying it as a compliment or out of frustration. But now I know he was frustrated because he supported this reform for five years and we were doing well. He observed the attacks and their political price. He was also receiving reports from a security angle telling him to quit the reform, to comfort the people and make sure the streets were okay. For a long time he shoved the criticism aside, but I think he reached a point under greater pressures with the economy, foreign currency issues, the prices, that he should cut out anything that was disturbing the people. The argument was, 'Forget education now, it's not the time'. Maybe he thought he was spending on people who did not want to learn.

I always knew it was a matter of time before this would happen; there were too many opponents. What people do not understand is that what we did was a miracle, an absolute miracle. The best observation I heard from an intelligence officer recently was, 'The question is not why you left. The question is how you stayed for five and a half years?'

LH A reform of the K-12 education system needs fourteen years to see the first cohort schooled entirely through the new system, and four to eight years after that if you want to see the results through higher education. How can the political system support a reform that requires such a long-term commitment?

TS That is a good question. I have been thinking about this question generally, and not only for Egypt. How do you carry out a major reform from start to end, a twenty year project? No political system has this stamina. We cannot expect someone to last in a ministerial position or any political position throughout the duration of such a reform. Those people in political positions can be believers, they can be dreamers, but in the space of four or eight years, not twenty years. In reality, any big education reform needs an extended period of political will or support. Political systems worldwide worry about anything that looks like a political liability.

If I had the chance to meet the President and discuss the reform, I would say, 'You know what, this is like raising a child. If you give up at some point, you can hardly go back again'. It is like when a child throws a tantrum because he wants the chocolates. You should not give him the chocolates. You have to be patient, because if you give up and hand him a chocolate, he will do that every time. It is similar with the reform. We were almost there. We reached Grade 5, it was just about the tip of the curve. And when you reach Grade 7 you run. So, it is about controlling the crowd and the expectations. Now, the crowd, the people dedicated to attack, think they have won. So now they will say that every single time they do not like something they will throw the same tantrum using social media and they will be harder to control. That is my fear. They just took away what we were doing by force.

LH Was there a handover with your successor Dr. Reda Hegazy (Minister, 2022-2024)? Will he continue with Education 2.0?

TS No, there was no handover. The new minister, Reda Hegazy, is the person I chose as my Deputy for Teachers' Affairs to nurse the old system until the new system replaced it. He oversaw the old exams and grading. He does not know much about 2.0 or the EKB. From a political point of view, he was told to contain the criticism and this forced him in his first week to make statements about 'removing' and 'eliminating'

lessons from the new Grade 5 curriculum. They call this 'lightening' the curriculum. But when you remove something this results in a learning gap. So the new minister returned to the old way and fed the old culture. And that was only in the first week. He does not have the same sense of mission for the reform.

Fortunately, the President insisted that anybody who comes to this position should continue building the World Trade Center. They might choose different colors for the balconies, but at least, I hope, we can get the building completed. But actually, we made it half way, almost. There are new curricula for KG1 to Grade 5, these cover seven years. And I made sure payment was made for Grade 6 to be completed. That is not easily reversible. You have between twelve and fourteen million children who have not seen anything else besides 2.0. Policymakers will face a problem a year from now when the 2.0 cohort enters Grade 7, which still operates according to the old 1.0 system. This will put pressure on them to continue along the same lines. We have partners in place, we have the EKB in place.

6. The Legacy of Education 2.0

LH What do you consider your greatest achievements during the five and a half years of your tenure as Minister?

TS We achieved a lot technically. We built brand new curricula from this totally new vision, new assessment, and everything from KG 1 until Grade 5. Grade 6 is in the kitchen. So that is half the way. And actually, inside that new building there are over fourteen million kids, so that is nothing to sniff at. It is a huge scale. There are teachers who have gotten training, there are new books, there are new assessments, there is a lot on the ground. It has been a very rich experience. In high schools, we are still using the old curriculum, but we changed the assessment, we gave them the tablets, and built the IT infrastructure. We did over fifty million electronic exams. It is an incredible scale of integration of technology. Now, we have two or three platforms on the EKB that have everything you can imagine. All these curricula have a digital companion from the best publishing houses in the world including Britannica, Discovery, York Press, Wolfram, Mathematica, you name it. Just imagine that Mathematica is available for free to twenty million students in Egypt. We have twenty million free licenses here on the EKB. If you buy it in the US, it costs one

hundred dollars per student per year. One of the best things I did before leaving was to have enough screens in schools to enable broadcasting from the EKB and the TV channels in the classrooms. Students and teachers can go to them instead of private tutoring.

It was a very rich journey over the five and a half years trying to materialize the dream at a speed that was a blessing and a curse. A blessing because enemies were hit by a storm, so they did not know how to stop us quickly. But it was probably too fast for parents and teachers to absorb. We probably should have regulated the speed a little bit.

LH On a more personal level, how did being the minister affect you. What kind of toll has it taken on you?

TS Oh, that is a tough one. I paid a very heavy psychological price. It is like I have been battling Mike Tyson for five years and have just gotten out of the ring with wounds everywhere, psychological ones at least. It is like a trauma. It was tough, and there is no way to justify it. Especially when you kill yourself to give people your best, and they just throw stones at you. People do not know how much damage they can do.

I am still trying to restore my old, happier self. I am just trying to erase the bad stuff and only remember the good. If they had asked me to put in five more years, I do not know how I could have sustained it. I am not sure I would have had the energy to handle those people again, the interest groups. Technically yes, I could continue working from an ivory tower or from a conference room. But I am grateful for this huge experience, nonetheless. I would not have had the chance to do something at that scale, or even make a few friends who I am very happy to know. And the kids have been the best part in the whole journey. They are victims of the environment they find themselves in. They have no problem at all with the new curricula or the new platforms. The problem is with their parents.

LH How do you see the legacy of Education 2.0?

TS I was in Paris 27-30 June (2022) at the UNESCO headquarters for a huge preparatory meeting for an upcoming event in New York, the Transforming Education Summit (16-19 September 2022) called for by the Secretary General. Over a hundred ministers of education were there. I worked at UNESCO for many years, so I knew a lot of people

in the building. But the number of ministers who asked to meet one-on-one was incredible. Then I sat on a panel and the Assistant Director General of UNESCO for education, a lovely Italian scholar Stefania Giannini, said, 'Today, UNESCO ranks the Egyptian 2.0 and the Finnish system as the two exemplary model systems worldwide'. The Minister from Finland was saying, 'I'm inspired by what Tarek is doing'. I said, 'I came to learn from you'. And she said, 'No, you did a much more difficult job. All I have is like 500 schools with half a million kids. You have 60,000 schools'. This is to say that 2.0 is known to more countries than you think, and they are very inspired by it.

The Palestinian minister came to sit with our ambassador and me and said, 'You are helping me a lot!' I asked him how. He said that when he goes to cabinet meetings in his government and asks for anything and they show resistance he says, 'Tarek did it and it worked'. So, he always takes us as the benchmark. If it works in Egypt, then it must work for them. The Saudi minister is also inspired by 2.0. His problem is the political sensitivity.

LH How would you like people to remember you as Minister of Education?

TS Actually, there is a board in the ministry building (on Falaky Street) of all the ministers who came over time (see Fig. 2.3). There is a picture of every person who served as Minister of Education with his picture and the duration in office. Taha Hussein is of course on that board, with many other great people. Taha Hussein was my idol. He battled for free education for all. I hope people remember that through the EKB I battled for free state-of-the-art knowledge for all. We also planted the seeds for the foundation of a modern education system. Modern in the sense that it brings Egypt back to the frontiers of the world's leading countries. Not in terms of having oil or resources like that, but of having intellectuals, and that is something that is really dear to me. I am proud of Egypt as the source of inspiration, since the Pharaohs throughout history in many phases. It has always been a cultural hub. Hopefully we can return to that. There are millions of bright kids who just need an opportunity. Today we have twenty-five million kids in the K-12 system, that is a huge number. If 10 or 15% of them are benefitting from what we offer them, I think they will propel Egypt forward.



Fig. 2.3 Board of Ministers of Education in Ministry of Education and Technical Education, Cairo. Photo by Linda Herrera, 2020.

7. Education 2.0 Resources

Ministry of Education and Technical Education. 2018. 'Education 2.0: Vision and Strategy. Egypt's Transformation Program (2018-2030)', *Education 2.0 Research and Documentation Project*, <https://drive.google.com/file/d/1gO8G5J3meYhBi7n7GIL4gNjf4EWe8Eku/view>

Ministry of Education and Technical Education. 2020. "Transforming Teachers: Education 2.0 Teachers: A New Cadre of Educators", *Education 2.0 Research and Documentation Project*, <https://drive.google.com/file/d/1VgnNBliU09U2fopMF6dbpFrzFqLYsDxv/view>

3. ‘An Orchestra Without a Conductor’: The Need for Strategic Management of Egypt’s Education System

Tarek Shawki (Edited by Linda Herrera)

Abstract

Dr. Tarek Shawki, Chair of the Specialized Presidential Council for Education and Scientific Research (September 2014-August 2022), participates in a panel organized by the Egyptian Center for Economic Studies on 21 November 2016. He laments the poor state of the nation’s education system as reflected in low global rankings, endemic problems of plagiarism, and the lack of coordination, rendering it like ‘an orchestra without a conductor’. He calls for a new education governance model managed by an authority that would oversee the entire education sector to facilitate long-term strategic planning, manage international cooperation, and allow for flexibility in hiring. He suggests the Alexandria Library or the Egyptian Knowledge Bank as possible models. This chapter includes a postscript with the 2024 draft law for the ‘National Council for Education, Research and Innovation’ (Appendix A) and the structure of the Alexandria Library (Appendix B). The original talk has been edited for flow, brevity, and clarity, staying true to the original content.

Keywords

international education rankings, management, plagiarism, quality control, strategic planning, teacher education

1. Low Rankings in Education

We have been in the presidential councils for two years now (Fig. 3.1). We first spoke to the President in December 2014. We are trying to pinpoint initiatives from a massive panorama filled with problems. The bottom line is that we do not like to hear what the World Economic Forum rankings say, namely that today, Egypt's primary education ranks 139 out of the 140 countries.¹ Other rankings confirm this too. This is a catastrophe that no one likes. But this is a fact. Numbers do not lie. We are number 111 in higher education. In scientific research, we are number one in only one list, which is plagiarism, the theft of scientific research. Egypt is number one. It is not that we do not do any research. No, we actually steal it. This is very sad. Here, we have a moral issue *and* a scientific one. Where do we begin?



Fig. 3.1 Tarek Shawki (left) puts forward a proposal to reform Egypt's education system. Talk given at the Egyptian Center for Economic Studies (ECES) on 21 November 2016. Wikimedia Commons, CC BY 4.0, https://commons.wikimedia.org/wiki/File:Tarek_Shawki-2016-education_reform.png#/media/File:Tarek_Shawki-2016-education_reform.png

2. Who is Running the Show?

From the point of view of management of the system, if we take a helicopter and look down, we see a circus, a very big system with many distractions and numerous bodies. We do not know who is running

¹ See the Global Competitiveness Report 2015-2016 (World Economic Forum 2015).

the show and who is making decisions. There is no honor and no accountability. Who does what? Who do the projects belong to? Who is responsible for monitoring? How do we judge when something is completed? These are just some questions. Add to this that people in different institutions do not speak to one another. For example, the president of the Academy of Scientific Research is appointed by the Prime Minister. He would tell you, 'I do not report to the Minister of Education'. The minister for [K-12] education and minister for higher education only speak to one another based on their mood, not because they have to. Technical education is sometimes on its own and sometimes combined with the Ministry of Education.

We have a big football team but without a coach. When children play football in the street, they fight. Who will be the goalie? Who will play right-back? They do not consider who would be best at a given position. You need a coach to give the players instructions so that the team wins. We do not have a coach. We have an ad-hoc team playing street football. A nicer metaphor might be, 'It is like an orchestra without a conductor'. There might be a phenomenal soloist in the orchestra, but these hundreds of musicians cannot play together. This leads to disharmony. We do not have any coordination.

And keep in mind that the different authorities we have are not independent. This old education system which we call '1.0', has chronic problems. The Ministry is the creator of this problem, and it is also on the frontline of defending this problem. This is a conflict of interest. The Ministry cannot be responsible for fixing this issue. You cannot ask someone to fix a problem which he himself created. The result will be zero. It will never work. This is a vicious loop. There are known strategies for solving these kinds of problems. We do not need to reinvent the wheel.

3. The Need for an Independent Education Authority

We have a managerial problem. We (in the Presidential Councils) have talked a lot about the need for a kind of commission (*mufawadiya*); we might call it a think tank, an authority, or a council. What we want is to make a new entity, whatever we call it. This authority would be directly under the office of the President of the Republic. It would have a board of trustees and an executive director, something like the Bibliotheca

Alexandrina (see Appendix B). It would have a dream team that is handpicked based on a person's qualifications and skills. We would separate the problem-solving and strategy from the implementation and monitoring. Like a think tank, this entity will be the place where there is competency, with the people who understand assessments, curriculum, and professional development of teachers. The Council of Scientists of Egypt have called for something similar. We presented this idea to the President, and I think it is on the path of implementation.

For this authority to work, it must be free from state bureaucracy, and therefore it needs its own laws. But there has to be bridging. The executive director must have a governmental status. The entity needs to be able to receive money, grants, and the ability to spend without daunting bureaucracy. To buy a pencil through the government takes six months. This is another catastrophe. Also, to be able to recruit and pay for a consultancy at an international rate requires a different law. The actions of this authority would be audited like the multinational companies. It would be very transparent, but free to move. This must be done by law, not with preferential treatment. In order to get things done these last two years, we have had to depend on personal relations, 'do this for my sake', etc. When there is a mandate with clear objectives in relation to the state and everything is in black and white, we will be empowered.

There are key concepts used in management like 'authority', 'mandate', and 'accountability'. We must be very clear about roles and responsibilities. Who is responsible for what? How will we ensure accountability? Like any job in the world, there should be job descriptions for ministerial positions. We cannot just select anyone as a minister and tell him or her to run things randomly. This is what is happening now. There is no job description and there is no way to make people in these positions accountable.

4. The Dream of a Different Education System

In March of 2015, the President asked us (members of the Presidential Council): 'What about education? What will happen to education in a year and a half?' I told him, 'This primary education is like a car that has been sitting in the garage collecting dust. If you cleaned it, polished it, and changed its tires, it will not become a Ferrari. It has a threshold,

beyond which it can no longer work'. I told him, 'We want to dream. Get us out of this chaos to dream of something new'.

The Vision 2030 is beautiful.² What is written in the Egyptian constitution (of 2014) is beautiful. But I tell them, without changing the way we do things, nothing will happen. I would not even bother to spend time thinking about changing assessments, the Thanaweya Amma, and other things like scholarships for university because I know I will not be able to implement them unless there is an entity like this one. One idea is that if a student fails (in university), they must pay the cost of their college education. They wrote in the papers that we are against education. But the simple idea is that university education is a scholarship from taxpayers. Use it effectively or lose it. It is four years. If the person wants to spend eight years in college, okay, but the scholarship will not cover the four additional years. This idea received a lot of resistance.

5. Reimagining Teacher Education

There are overused terms in Egypt, like 'rehabilitating the teacher', 'capacity building', 'curriculum development'. These terms are abused. We must stop at curriculum development and ask, 'What do we mean exactly'? Define the words that you are using. Do not throw these terms at me. When the newspapers print articles about how our curriculum is better than Singapore's curriculum, and that we provide expertise to Africa, the message is that we are the best at something. This is a misconception. We must better define the terms we are using.

As an engineer, I say first things first. For the past two years we have been trying to understand the system and diagnose what is wrong with it. An integral part of education is the development of the personality. The teacher is the most important element, and we must start from there. But unlike the past, the teacher is no longer a role model. When those students who cheated on the Thanaweya Amma become teachers themselves, these behaviors perpetuate. Obviously, this does not apply to all teachers, but teachers today are not the same as the teachers of the

2 Egypt Vision 2030 can be accessed at https://web.archive.org/web/20250301084436/https://arabdevelopmentportal.com/sites/default/files/publication/sds_egypt_vision_2030.pdf

1960s, not at all. These days we hear stories about child abuse, beatings, and students beating their teachers. Parents also come and beat the teachers. There is a great moral corruption from both ends.

The teacher is a very important component of education from the point of view of knowledge, morals, and behavior. But we do not have the high caliber of teacher that we need. Why? Because colleges of education do not graduate the right product. They will be mad at me for saying this, but this is not important right now. The important thing is to fix it.

Colleges of education are not a good idea at all. Singapore has a completely different system of Institutes for Teacher Education (ITE). This is something amazing. It is number one in the world. These people would not mind coming here tomorrow and making something similar in Egypt under Singaporean management. This would stop the aimlessness that we have in the colleges of education and the Professional Academy of Teachers (PAT) which has lost its compass. Instead of licensing training for teachers, PAT became the trainers of teachers. These are the main ideas we are interested in right now. Instead of speaking about the details, we can talk about many dreams. But the implementation of these dreams needs the existence of a different management system. There needs to be accountability and a mandate.

The K-12 system has 1.8 million teachers who are not in agreement at all on the new goal of education. Rehabilitating them is not an easy feat. Not easy at all. And it costs a lot. We tried to create a license for professionals, which is a very simple idea. They almost sent us in front of a firing squad. The idea of a professional license is essential in countries across the world. No one practices medicine without a license or builds a building without a license. Every four years the license must be renewed. This provides guarantees, quality assurances that these people are up to date.³

3 The United States Agency for International Development (USAID) Teach for Tomorrow project addressed primary-grade teacher professional development and teacher certification by providing technical assistance to the ministry 'that will create and institutionalize a teacher certification system with clear standards and performance-based licensure renewal' (see <https://web.archive.org/web/20240304125317/https://2017-2020.usaid.gov/egypt/basic-education/teach-tomorrow>). That project was supposed to last from 2020-2025 but was discontinued early in 2025 when the Trump administration cut most funds to USAID.

The minister is supposed to implement the Key Performance Indicators (KPIs) that came from this council, the board of trustees, and all these people. The President of the Republic signed it (see Egypt Vision 2030).⁴ The idea is to train a fixed number of teachers based on a certain method. The problem is that the government does not reward qualifications because it pays pennies. The qualified teachers go abroad or work for multinational companies. Who will fix this? The qualified people have left the country. They are not here. What are we going to do?

6. Coordinating International Cooperation

There is a lot of international cooperation in education. We work with organizations like UNESCO, UNICEF, UNDP, and the World Bank, but where do these things go? Who is doing the coordination? The ambassadors of foreign countries and the heads of UN agencies come to us (in the Presidential Councils) and tell us that they do not know who to speak to. They trust us because we are independent and do not belong to any authority. They all face the same problem. They do not know where to give their money. They do not know who is running things. All this money will not yield results because the system is very chaotic. Who coordinates between the international organizations and the donors? This is a problem. I want them to give resources to us based on what *we* want, not based on what *they* want. There should be someone who has all the pieces of the puzzle and tells them where to put their money.

For instance, what we want from Finland is only one part. But no one has a bird's-eye view because this education authority does not exist. The European Union says that it has forty million dollars, but they do not know who to give it to. All of this has to be centralized. If this authority existed, it would be able to see a complete picture of primary

4 The Egypt Vision 2030 is based on ten pillars that focus on different areas of Egypt's development plan. The seventh pillar is devoted to education and training and specifies the KPIs that are supposed to be achieved by 2030. The overall goals are to achieve: 'A high quality education and training system available to all, without discrimination within an efficient, just, sustainable and flexible institutional framework. Providing the necessary skills to students and trainees to think creatively and empower them technically and technologically. Contributing to the development of a proud, creative, responsible, and competitive citizen who accepts diversity and differences, and is proud of his country's s history' (Arab Republic of Egypt 2016: 13)

education, the Azhar education, and higher education. It would know of any penny coming from outside and where it is going. The way things are now, the international partners and donors have to knock on doors at the Ministry of Education and the Ministry of Higher Education. They are the ones that come to us. Not the other way around. It will force us to do things in a specific way.

7. The Knowledge Bank as a Model of National Coordination

The Egyptian Knowledge Bank (EKB) did exactly this. We made the Knowledge Bank, which was a very big and beautiful project that will impact scientific research, rankings, publishing, and intellectual property. Before, the publishers used to go to the Armed Forces, to each university, public and private, or to the Higher Council of Universities. Each entity gave them a rate. The group who did the Knowledge Bank told the publishers that we will only make contracts with one entity. We became the ones with the power, and we started to have leverage. With the Knowledge Bank, we were able to negotiate rates of 99% less than what we used to pay. The way we designed the Knowledge Bank is important.

We need an authority in education with multiple objectives: problem solving, coordination, and monitoring. The implementation is in the ministry, but the strategizing happens outside of it and should have nothing to do with changing ministers, at all. This system can be replicated in health care and medicine, as Dr. Okasha⁵ has suggested, and we can do it in the economy. We need to cluster these things together so that someone sees the big picture. The President will do a big conference, 'a social forum on education' in December (2016). This topic will be the focal point. How do we manage the solution, not the

5 Dr. Ahmed Okasha is an internationally known psychiatrist from Ain Shams University, Faculty of Medicine (MB, MSc, M.D., and Ph.D.). He was the founder and honorary chairman of the Institute of Psychiatry at Ain Shams University, Professor and Director of the World Health Organization (WHO) Collaborating Center for Training and Research in Mental Health, Institute of Psychiatry, Ain Shams University, Member of the Expert Advisory Panel in Mental Health – WHO – Geneva, President of the Egyptian Psychiatric Association, President Arab Federation of Psychiatrists, Honorary President World Psychiatric Association, Honorary Fellow of World Psychiatric Association (2005), among many other prestigious positions.

details. The experts are concerned with the details. We need to put forward this solution.

8. Epilogue: A National Council for Education

On 22 October 2024, the Egyptian House of Representatives eventually approved a draft law submitted by the government to establish the National Council for Education, Research and Innovation. The Law, divided into eight articles, differs significantly from the ideas proposed in 2016 by the members of the President's advisory councils. This council is composed of ten ministers, including from the military and state security apparatus (Ministers of Defense and Military Production and Interior), and other ministers with no discernible education expertise. Rather, they oversee national budgets, work, and economic growth, and include the Minister of Industry, Minister of Planning, Minister of Finance, and Minister of Labor. The council includes twelve 'specialized experts' and businesspeople for renewable two-year terms, nominated by the Prime Minister and decided by the President of the Republic. For a full text of the draft law, see Appendix A.

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10. Appendix A: Draft Law on National Council for Education, Research and Innovation, 2024

Article (1)

A council called the 'National Council for Education, Research and Innovation' shall be established, reporting to the President of the Republic, and its headquarters shall be in Cairo Governorate. It shall be referred to in this law as 'the Council.'

Article (2)

The Council shall be formed under the chairmanship of the Prime Minister, and the membership of each of the following:

- 1- Minister of Defense and Military Production.
- 2- Minister of Industry.
- 3- Minister of Planning, Economic Development and International Cooperation.
- 4- Minister of Interior.
- 5- Minister of Communications and Information Technology.
- 6- Minister of Higher Education and Scientific Research.
- 7- Minister of Finance.
- 8- Minister of Labor.
- 9- Minister of Culture.
- 10- Minister of Education and Technical Education.
- 11- Deputy of Al-Azhar Al-Sharif.
- 12- Chairman of the Board of Directors of the National Authority for Quality Assurance and Accreditation of Education.
- 13- Chairman of the Board of Directors of the Egyptian Authority for Quality Assurance and Accreditation in Technical and Vocational Education and Training (Itqan).
- 14- Executive Director of the National Training Academy.
- 15- Eight experts specialized in the Council's field of work, and four businessmen, to be selected by a decision issued by the President of the Republic based on the nomination of the Prime Minister for a period of two years, renewable for another similar period.

Article (3)

The Council shall meet at the invitation of its Chairman at least once every three months or whenever necessary. Its meeting shall be valid

if attended by the majority of its members, provided that half of the number of experts and businessmen are among them. It shall issue its decisions by an absolute majority of the votes of those present. In the event of a tie, the side of the Chairman shall prevail. The Council may invite to attend its meetings those whose expertise it deems necessary, without them having a counted vote.

Article (4)

The Council aims to set the state's higher policies in the field of education in all its types and all its stages, and to achieve integration between them, and to supervise their implementation, with the aim of advancing education and developing its outcomes in a manner consistent with the state's national goals and the requirements of the local and international labor market. It also aims to set the state's higher policies in the field of research and innovation.

The Council shall exercise all powers necessary to achieve its objectives, and in particular it shall have the following:

1- Developing the national strategy, plans and programmes for developing education, research and innovation, and mechanisms for monitoring their implementation, in coordination with the relevant ministries, departments and agencies.

2- Reviewing and updating national priorities in the field of education, research and innovation in various sectors, preparing recommendations related to the technical, administrative and legal frameworks necessary to develop the educational process, and proposing ways to develop and advance it, taking into account the integration of its outputs with the requirements of the local and international labor market.

3- Developing a national plan to develop the infrastructure of schools of all types and stages and Al-Azhar institutes in a manner consistent with the distribution of universities, technological institutes, industrial zones and national projects, and following up on the implementation of this plan with the ministries and relevant authorities.

4- Developing an executive plan for training policies at all educational stages and beyond, raising awareness of the importance of technical education, training and new specializations in this field, and its role in supporting the national economy, as well as developing a marketing plan for the outcomes of education, research and innovation locally and internationally.

5- Proposing ways to develop the institutions responsible for implementing the educational process, their operating systems, and the necessary coordination mechanisms with the relevant ministries, departments, and agencies to ensure the achievement of the planned objectives.

6- Proposing criteria and conditions for selecting those responsible for the education, research and innovation system, in light of considerations of scientific and administrative efficiency, in a manner that ensures the improvement of its performance.

7- Proposing ways and mechanisms to develop the organizational structure of research and innovation to achieve the target in various fields of science within the framework of a vision that is consistent with the scientific and material capabilities available to the state.

8- Developing a comprehensive vision for caring for the gifted, talented and geniuses during the various stages (the discovery stage—the balanced scientific, psychological and physical rehabilitation stage—the stage of benefiting from the fields of research and innovation) in a way that ensures the optimal utilization of the currently existing institutions and energies.

9- Issuing a comprehensive periodic report on the development of the education system in all its types and all its stages, every two years in cooperation with the bodies concerned with quality assurance and accreditation, to be submitted to the Council of Ministers and the House of Representatives.

Article (5)

The Council shall have a technical secretariat that shall follow up on the executive procedures of the policies and plans issued by the Council in coordination with all ministries and relevant authorities and present appropriate recommendations in light of the results of the follow-up and coordination.

The Technical Secretariat shall be headed by a person with scientific and practical experience in the Council's field of work, and shall include representatives from relevant ministries and bodies, and a number of scientists and experts in the fields of education, research and innovation.

The formation of the Technical Secretariat, the determination of its other powers and its work system, and the financial treatment of

its chairman and members shall be issued by a decision of the Prime Minister.

Article (6)

The Supreme Council of Al-Azhar, the Council of Private Higher Institutes Affairs, the Supreme Council of Universities, the Supreme Council of Pre-University Education, the Council of Private Universities, the Council of Foreign University Branches Affairs, the Supreme Council for Technological Education, and other councils concerned with developing plans for education, research, and innovation, as the case may be, when exercising their powers stipulated by the laws or decisions regulating them, are committed to taking into account the implementation of the higher policies set by the Council.

Article (7)

The Council shall submit a report on the results of its work and recommendations every six months to the President of the Republic.

Article (8)

This law shall be published in the Official Gazette and shall come into effect on the day following the date of its publication.

II. Appendix B: Decision No. 76 of 2001 of the President of the Arab Republic of Egypt on the Alexandria Library

Regarding the organization of supervision of the Library of Alexandria, the method of its management, and the conduct of its financial and administrative affairs, the President of the Republic, after reviewing the Constitution; and Law No. 1 of 2001 regarding the Library of Alexandria; and after the approval of the Council of Ministers, decided:

Article (1)

The Library of Alexandria is a public legal entity, headquartered in Alexandria, and is subject to the President of the Republic.

Article (2)**Alexandria Library Administration**

The Library of Alexandria is managed by:

1. Board of Patrons
2. Board of Trustees
3. Library Director

Article (3)**Board of Patrons**

The Board of Patrons consists of a number of prominent figures from different countries of the world, not less than eight and not more than twenty-four members, who are selected at the invitation of the President of the Republic, provided that the President of UNESCO is among them. The President of the Republic or his choice for this purpose assumes the presidency of the Council, and the Minister of Higher Education assumes the Secretariat of the Council.

The Council is responsible for supporting and following up on the library's activities, and providing whatever guidance it deems appropriate in this regard. It holds a meeting every three years at the invitation of its President.

Article (4)**Board of Trustees**

The Board of Trustees shall consist of a number of public figures of scientific standing or international experience, both Egyptians and non-Egyptians, not less than fifteen and not more than thirty members, including five members from the Egyptian government in their official capacities; they are the Minister of Higher Education, the Minister of Culture, the Minister of Foreign Affairs, the Governor of Alexandria, and the President of Alexandria University.

The Chairman of the Board of Sponsors shall chair the Board of Trustees and shall choose from among its members a person to replace him in the event of his absence.

The first Board of Trustees shall be appointed by a decision of the President of the Republic. The term of membership of the members of this Board who are not appointed in their official capacities shall be two years, after which the membership of one-third shall be renewed every year.

Members of the Board of Trustees who are not appointed in their capacities—other than the first board—are appointed by a decision of the Board of Trustees, based on a nomination by one of its members. The term of membership in this case is three years, renewable once.

The Board of Trustees is the governing authority over the Library's affairs. It is responsible for formulating the general policy for its management, planning its activities, and approving its financial and administrative regulations. The Board of Trustees meets once a year, and may hold extraordinary meetings at the invitation of its Chairman, or upon the request of at least half of the members.

The meeting of the Board of Trustees shall be valid if attended by at least a majority of the members, and decisions shall be issued by a majority vote of those present, and in the event of a tie, the side to which the President belongs shall prevail.

The Council may have among its members committees assigned to carry out a specific task or conduct specific research or studies.

The Library shall bear the expenses and allowances for attending meetings of the members of the Board of Trustees and its committees.

Article (5)

Library Director

The Board of Trustees shall appoint the Library Director for a renewable term of five years, and shall determine his financial allocations. A decision shall be issued by the Board by a two-thirds majority of its present members. The candidate shall be required to have a distinguished international standing and broad culture, and to have administrative competence and technical experience.

The Library Director shall be its CEO, and shall be entrusted with implementing the policy established by the Board of Trustees, preparing the agenda for the Board's meetings, and having the right to attend its sessions without having a vote in the deliberations.

The Library Director heads the staff and issues decisions regarding their appointment, promotion and termination of service, in accordance with the provisions of the legal system to which they are subject.

The library director shall be its legal representative before the courts and in its relations with others.

Article (6)**Financial and Administrative Regulations and Library Staff Affairs Regulations**

The Library Director shall prepare its financial and administrative regulations and its staff regulations in a manner that is consistent with the nature of the Library's activity and enables it to achieve its mission without being bound by the management systems stipulated in other laws. These regulations shall be submitted to the Board of Trustees for approval.

The staff regulations, once approved, will be the legal system governing the relationship between staff and the library.

Article (7)**Budget and Auditors**

The Library shall have an independent budget, and the budget surplus shall be carried over from one year to another. Without prejudice to the oversight of the Central Auditing Organization, the Board of Trustees shall appoint external auditors, and the Board shall receive their reports.

Article (8)

This decision shall be published in the Official Gazette and shall be effective from the date of its publication. Issued by the Presidency of the Republic on 25 Dhu al-Hijjah 1421 AH (corresponding to 20 March 2001 AD). Hosni Mubarak (Alexandria Library Website n.d.)

12. Companion Videos

Video 3.1 Tarek Shawki: 'A Proposal to Reform the Education System in Egypt', Egyptian Center for Economic Studies – ECES, 21 November 2016 (in Arabic), YouTube, <https://www.youtube.com/watch?v=jNTJ6pbflPQ>

Video 3.2 Tarek Shawki: 'A Proposal to Reform the Education System in Egypt', edited with English subtitles, Education 2.0 Research and Documentation Project, 16 February 2024, YouTube, <https://www.youtube.com/watch?v=Gl1yOcdSBLw>

4. The Road to the Egyptian Knowledge Bank: Interview with Tarek Shawki

Linda Herrera

Abstract

The Egyptian Knowledge Bank (EKB) was launched in 2016 to provide researchers, students, and the general public in Egypt access to state-of-the-art knowledge and learning resources on a digital platform free of charge. Tarek Shawki, Minister of Education and Technical Education from 2017-2022, was a driving force behind the EKB project. He recounts how the seeds of the idea for an open-access knowledge platform began when he was a professor at the University of Illinois at Urbana-Champaign in the 1980s and 1990s, a time that coincided with the birth of the Internet. The idea continued to grow during his years at UNESCO as Chief of the Section for ICTs in Education, Science and Culture, and began taking concrete shape while he was Chair of the Presidential Specialized Council for Education and Scientific Research and then, Minister of Education. The EKB was initially supported by a presidential fund to serve the country's goals of advancing its knowledge economy, but it faced opposition in parliament as being a 'luxury' good. Shawki addresses the future of the EKB, the challenges with funding and sustaining the project, how it has evolved into a publishing platform, and ways it has gained recognition outside of Egypt.

Keywords

birth of Internet, knowledge equity, Marc Andreessen, publishing, rankings, research, Steve Jobs, Stephen Wolfram, UNESCO, University of Illinois at Urbana-Champaign, Egyptian Knowledge Bank (EKB), Scopus, Web of Science

1. Defining the Egyptian Knowledge Bank (EKB)¹

LH What is the Egyptian Knowledge Bank (EKB) as a concept and as a digital platform?

TS² The Egyptian Knowledge Bank (EKB) is a model of knowledge justice or knowledge equity. The EKB's main philosophy is that it is free for everyone in Egypt. At a time when almost everybody has a way to access the Internet, the EKB is a way to assemble the state of the art of knowledge using advances in technology. Everything on it has gone through a review process. The idea is that anyone with skills and interests should not be stopped from being the next Nobel laureate because of lack of access to knowledge.

We launched the EKB in January, 2016, and since then it has been gradually growing. Six years later, the quality of undergraduate and graduate education has increased. Our rankings of universities have changed tremendously. When I joined the Ministry of Education and Technical Education (2017), I put a lot of K-12 material on it and digitized courses. It remains a work in progress.

2. Teaching at the University of Illinois During the Birth of the Internet

LH Going back to the seeds of the idea for the EKB, in your TedX Cairo talk of 2015,³ you talk about how you were a young Assistant Professor of Theoretical and Applied Mechanics at the University of Illinois at Urbana-Champaign during the birth the Internet. How did being in that environment influence you?

TS I went to Illinois at the perfect time, between 1986-1999. The birth of the Internet was around 1994/95 when I was there. I saw the 'before technology' and 'after technology', and I jumped on it. I did my Ph.D. at Brown University at the end of the typewriter age. I wrote my

1 This chapter is derived from two interviews conducted by Linda Herrera with Tarek Shawki on 7 September 2022 in Cairo, and on 7 March 2024 via Zoom.

2 Tarek Shawki served as Egypt's Minister of Education and Technical Education from 2017-2022. For a detailed overview of his professional career, see his LinkedIn profile at <https://www.linkedin.com/in/tarek-shawki-0059025/?originalSubdomain=eg>

3 See the TEDxCairo talk, 'Learning for Life' (Shawki 2015).

dissertation on a typewriter and did all the graphs by hand. And then I arrived to the University of Illinois at Urbana-Champaign where there were all kinds of innovations. During those thirteen years, we had an office for computer services. This was also when email started. At that time, I did not have any friends with an email account, so I used to send emails to myself. When the university first bought the supercomputer, the Cray computer, it was a big deal. We would go and watch that big computer. Actually, any iPhone today is faster than that computer. But at that time, we used to rent time on it to do research, and my research was computational, so I was really into this.

LH Some of the contemporaries you met at Illinois, like Stephen Wolfram, Marc Andreessen, and Steve Jobs, were tech pioneers. What was the nature of the relationship you had with them?

TS Stephen Wolfram and I were hired the same year at the University of Illinois and got to know each other. I was hired as an Assistant Professor, and he was hired as a Full Professor, though he was younger. He was made director of the Center for Complex Systems Research. Everyone on campus was talking about him and saying, 'Who is this twenty-six-year-old kid who walks in the door as a tenured full professor and center director?' He was a geek, a super genius, a physicist who got his Ph.D. from the California Institute of Technology when he was 20 or 21 years old. Not surprisingly, Steve Jobs was his friend and would come to Illinois to visit him. I used to hang out with those people. They were actually forming their creative ideas at that time.

After Steve Jobs was kicked out of Apple in 1985, he told Stephen (Wolfram), 'I am making a new computer called the NeXT Computer'. This was a black machine, a unique looking thing that was a hit at the time and only sold in universities. In 1993/94, I bought one hundred of those computers from funding I had from a National Science Foundation grant. I made a lab across two rooms. I used to spend all night learning Unix to be able to fix them. There was no system administrator. I fixed the computers and made accounts for my students and taught them how to use them.

After a year of being employed as a full professor, Stephen Wolfram wrote to the president of the university, like a two-line message that read, 'I hereby submit my resignation because I am bored' (laughs). He is that

kind of a geek. He went on to make his company 'Wolfram' in Champaign (Illinois). His first product was called 'Mathematica'. He showed it to me because we were always talking about these things. He told me, 'You know, I can make the computer do symbolic math'. I said, 'We cannot do that. Computers do numerical math'. I was thinking about calculators which have numbers. But he wanted a computer to solve equations that are symbolic, like when you write $AX + B = 0$. How could the computer understand that? But he managed to do it. He had the first software that does symbolic math. I was fascinated. He gave me the floppies of version one. I put Mathematica on the NeXT computers in my lab.

LH You were at the University of Illinois during the creation of the first popular web browser Mosaic, developed at the National Center for Supercomputing Applications (NCSA). Were you aware of this at the time?

TS Yes. In 1993, the Internet as we know it with the HTTP protocol, was born at the University of Illinois by a team led by Marc Andreessen.⁴ Marc was our student at the College of Engineering. I used to hang out with him and that group of tech geeks. Marc tried to explain the HTTP protocol to me, and I could not figure it out. He said, 'You can have this page on your computer, and I can see it on my computer'. That seemed like magic. He showed it to me and I said, 'What? I can make my courses like that?' I thought it would be cool to try to do my courses online.

LH What made you want to experiment with teaching your courses online?

TS In 1994, I was already a tenured Associate Professor, so I was free to do my hobbies and experiment with things. I learned to write code in HTML which was very difficult. I then started to prepare my own content. By 1995, I had a whole website called 'Mechanics on the Internet' which was very unique. It had six courses, including Material Science, Fracture Mechanics, Elasticity, and others. I taught the students step by step how to participate in the class, see the solutions to their homework, access their

4 Mosaic was released in 1993. In 1995, Microsoft licensed Mosaic to create Internet Explorer. Andreessen left UIUC with a group of colleagues to start the Netscape Communications Corporation in Silicon Valley which produced the Netscape browser. In his book *The Founders: The Story of Paypal and the Entrepreneurs Who Shaped Silicon Valley*, Jimmy Soni describes the environment of innovation at the University of Illinois in the 1990s (2022).

grades, all these things. At that time, no one was doing this. My colleagues thought I was crazy. I was doing this with my students in Illinois.

I took this even further in 1996, during a sabbatical in Egypt. My department chair contacted me to ask if I could teach a graduate course. He said, 'I know you are on sabbatical, but there is a graduate course you teach every other year and it has to be taught this year or else this cohort will miss it'. I asked how I was supposed to do that since I was in Egypt. He said, 'Oh, we can use the Internet.' I said, 'Are you kidding? It is impossible. We have dial-up in Egypt'. But I did it. I taught that course in Fracture Mechanics to students in Illinois using dial-up from Cairo. I had them do the homework and send them to a computer in Talbot Lab (in Illinois), and I graded them from Egypt. Teaching has always taught me a lot.

LH How did your experiments with teaching online inform your ideas about education?

TS After I learned how to use technology in the classroom, I wanted to learn from everywhere with no barriers. I saw that with the new technologies, this was possible. In 1996, I came up with an idea called the 'Global Campus'. The way I saw it, the new technologies could allow students to attend courses in different universities. I was thinking, 'What if all the great professors put their courses in one place that we call the Global Campus?' For instance, if someone wanted to attend à la carte courses at Brown, Harvard, and Caltech, digital technologies allowed the possibility to do that. The problem was about the degree; who would give the degree? I wrote big proposals to get funding for the Global Campus, and we got the funds. We could not carry the idea through to the end unfortunately, because these campuses went to other platforms. But the idea was there very early in 1996.

I become famous in the Midwest for being an early innovator of online classes. I went on a Midwest tour to different universities to teach them how to do their courses online. That is what caught the attention of UNESCO. They offered me a position in their Communication Information (CI) sector. When I left Illinois to start my United Nations phase in 1999, I had two fully functioning labs with over one hundred NeXT computers and servers at Illinois. I tried all the new technologies.

3. Seeds of the Idea for a Knowledge Bank

LH When did you start forming ideas for something resembling a knowledge bank?

TS Ever since meeting Steve Jobs at Illinois, I had kept in touch with the Apple folks. I talked with them all the time. One of those conversations was with John Couch, the Vice President for Education at Apple.⁵ This conversation was in 2007 after the first iPhone was launched, and a year after I had the idea for the Global University.⁶ I met him in Cupertino and we also met in Munich. I remember telling him, ‘John, we must be able to do something now that you have this amazing device. Can you do an iPhone that is much bigger? Like the size of a DVD box?’ The DVD was the reference then. It was the idea of the tablet. He asked why and I said, ‘Because we can put courses on these devices. Imagine, courses would be directly in the hands of people. You mix the Internet with courses’. We sat for like three hours. That was the birth of the idea of the iTunes U which he really carried out.⁷ They later made the iPad. I used to talk to him and his team about the courses. They took my advice in Arabizing the interface and sent me the fonts. I later joked with him, ‘You have to give me some IP rights or something for iTunes’. John Couch is still there and I visited him and Jonathan Ive (Chief Design Officer of Apple, Inc from 1997-2019) in Cupertino. In UNESCO, I suggested something like

5 John Couch, a graduate of UC Berkeley, was the first Vice-President of Education at Apple. He is also author of the book, *Rewiring Education: How Technology Can Unlock Every Student's Potential* (with Jason Towne) (Dallas, TX: BenBella Books, 2018).

6 The first generation iPhone hit the US market on 29 June 2007.

7 As reported on TechTarget, ‘iTunes U is a dedicated section of Apple’s iTunes Music Store that features educational audio and video files from universities, museums and public media organizations for free download to PCs and mobile devices. iTunes U allows a visitor to search, download and play educational content in the same way that they can manipulate songs, podcasts, television shows and movies. Participating institutions include Stanford, UC Berkeley, University of Melbourne, Texas A&M, MIT, Yale, Trinity College Dublin and many more. The Beyond Campus section of iTunes U also delivers programming from American Public Media, PBS, the Museum of Modern Art and the Smithsonian’ (<https://www.techtarget.com/whatis/definition/iTunes-U>). Apple discontinued the iTunes U service and its app at the end of 2021, though some of its contents can still be accessed on Apple Podcasts.

a global library of courses. And then, Apple was faster to do the iTunes U. So these were attempts. These were all precursors to the EKB.

LH You became director of UNESCO's Regional Bureau for Science in Arab States where you served in the 'Information Society Division' as the Chief of the Section for 'ICTs in Education, Science and Culture'. How did this work differ from your work in academia?

TS Going to UNESCO marked a big shift from academia. A big part of my decision was because my father was diagnosed with Parkinson's disease and I wanted to be back in Egypt, but I did not know how to do that. I did not apply for the UNESCO job, an old friend of mine recommended me. So, I felt like God wanted me to go back when I was offered this position in the UNESCO Cairo office. Working thirteen years at UNESCO gave me a different exposure. I saw hundreds of countries struggle with education, technology, and digital content. They talked a lot, but did very little in terms of solutions. As an engineer, I cannot sit patiently listening to problems without thinking of solutions.

LH You had been thinking for a long time about how to make knowledge open and accessible to the public. How did these ideas culminate into what would become the Egyptian Knowledge Bank?

TS After finishing at UNESCO, I went to the American University in Cairo in 2012. When the President started his first term in 2014, my public service started. He wanted an advisory group in education and scientific research. I do not know how, but he picked me and some other colleagues to be in that body (see Chapter 2 in this volume). The President had ambitions to turn Egypt into a world-class country, whether in education, science, or infrastructure. Of course, he had his hands full with economic challenges, security, and other things, but he was talking about grand visions. The President is a doer and a dreamer which fits perfectly with my chemistry.

When we were discussing how to improve education and scientific research, I brought up Taha Hussein and his generation. They were products of a scheme started by Muhammad Ali Pasha who built modern Egypt (1805-1848). He sent talented young people to France, Italy, England, and Austria to learn and return to Egypt. Some of our

most famous novelists and scholars were the products of those trips. They had a great influence on the culture, mindset, and intellectual life in Egypt. So, when the President mentioned that he wanted to bring Egypt to a new era of enlightenment, I was prepared to discuss how to do that. I mean, I had thought a lot about these ideas.

I said, 'Sir, with today's technology, we do not have to send people abroad. Publishers around the world are providing digital content. Human knowledge is all out there, in economics and arts, in medicine and engineering, in education, everything. We can grab it, assemble it, and make it available here'. I talked about how Taha Hussein preached about knowledge equity, about education for all children without discrimination (see Fig. 4.1). We could make that a reality by making all the knowledge available to every citizen, poor and rich, through a digital platform. Digitization is not a luxury anymore for this generation. They cannot imagine the world without technology. So, that was the birth of the idea.



Fig. 4.1 Taha Hussein (left), Minister of Public Instruction in Egypt from 1950-1952, receiving the National Honors Prize in Literature from President Gamal Abdel Nasser 1959, Cairo. Wikimedia Commons, public domain, https://commons.wikimedia.org/wiki/File:Nasser_and_Taha_Hussein,_Nov_19_1959.JPG#/media/File:Nasser_and_Taha_Hussein,_Nov_19_1959.JPG

LH Had you rehearsed your pitch about the EKB to the President prior to that meeting?

TS My response was not rehearsed at all. The President used to ask a lot of questions to the advisory group. He would say, 'Give me ideas, I need more ideas'. And we used to offer him a range of ideas. He stopped at this one about a knowledge bank. This idea he liked. And he asked a lot of questions—about scientific journals, the review process, the impact factor. I talked to him about Springer Nature, Elsevier, and Wiley which could be boring, but he listened carefully. He asked how this could benefit education and research in Egypt, what it would entail, how we could do this? I remember he spent five hours on this. Imagine, a president sparing five hours to listen to ramblings about something we later decided to call the Egyptian Knowledge Bank. We thought about what to call it. It is not a library. It is more than that. And it has actually grown beyond that. But he listened. When he really grasped the idea he said, 'You know what, this is a big hit. Go for it'.

LH How did the idea for a Knowledge Bank turn into a tangible project? What were the steps to get the publishers on-board?

TS The President allowed me to go and negotiate with the publishers. He asked me to come back to him with a more polished idea and with details about the costs. This was before I became a minister. I did this on a voluntary basis as a private citizen. When I traveled for the university or for something else, I would spend an extra day to meet publishers. I visited Elsevier, Springer, Wiley, and many others. I had to convince them to join this project.

The way publishers normally operate is they come to a university and sell a subscription. The first question they ask is about the number of users. The price is a function of the number per head based on the number of students. I was asking them to give me a flat license for one hundred million users, and that was not easy. But we managed at the end to find the business model to do that. And once the top guys accepted, the rest followed.⁸ I collected twenty-six MoUs and showed the President (see Fig. 4.2).

8 One of the challenges that emerged with discussions with publishers was how to guarantee archival rights to a publisher's materials even if a publisher might be sold or face bankruptcy. As explained in the UNESCO report on the EKB, a number of publishers worked together with a proactive solution. 'Collaborately, they established a system for digital preservation, safeguarding scientific materials



Fig. 4.2 Dr. Tarek Shawki (right) signs publishing agreement with Dr Olaf Ernst, IOP Publishing's Commercial Director, 2018, Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Tarek_Shawki_Signs_EKB_Publishing_Agreement.png#/media/File:Tarek_Shawki_Signs_EKB_Publishing_Agreement.png

I asked the President to invite the CEOs of those companies for a meeting so they would understand the seriousness of this. He invited twenty-six CEOs to the presidential palace and sat with them around a big circular table for over an hour and a half. We talked about costs and contracts. He said, 'Okay, we will do it'. That was November 2015, when he had his hands full with economic problems, security struggles, you name it. He put a value on knowledge. He might have told me it was not the right time for this, to wait a few more years, but he did not. We signed contracts. The EKB is essentially a presidential project. The ministry is a user of it.

for perpetual access. This innovative initiative laid the foundation for securing Egypt's uninterrupted access to crucial data, irrespective of external disruptions' (El Souefi 2024).

LH The EKB is supported by the office of the Presidency of Egypt, but is there wider political support for it? How has it been received politically, in the parliament and other government circles?

TS I can answer this with a story. Shortly after meeting the publishers, the President traveled to France. I received a call to attend a meeting of the Cabinet of Ministers. I was not a minister at that time and I had no idea what the meeting was about. I showed up and found about thirty parliamentarians, most of them hostile. That is when I became aware of the political trouble I would face in decision-making circles. The Prime Minister turned to me and asked, 'Tell us more about this thing called the Egyptian Knowledge Bank'. I was very surprised. This was something done by the President. I came empty-handed. I could have prepared a presentation. I briefly explained the project. He then asked his colleagues if they had any comments or questions for me. Each person in that room, with only two exceptions, proceeded to say the nastiest possible things about the EKB idea. I was watching them as if I was in the theatre. I had no idea what this was really about.

One comment that especially stood out was a parliamentarian who remarked sarcastically, 'Thank you very much for the caviar and cashews you bought when we do not have sewage in the villages'. Then the Minister of Justice looked at me and said in a tough tone, 'Congratulations, you just got yourself 600 years in jail because all these direct order contracts you made (with the publishers) are illegal'. I did not know what came over me but I replied, 'Sir, if I am a good boy, can I get out of prison on good behavior after 300 years?' He said, 'Are you joking with me?' I said, 'No, you just said I would get 600 years for illegal contracts. Let me remind you that I do not hold any office and I do not have the authority to sign contracts or spend government funds. So why are you talking to me? You should be asking the President'.

These kinds of statements went on for an hour and a half. When they finished, the Prime Minister looked at me and asked, 'Do you want to say anything?' I had a lot to say and they could not stop me. I said,

When you compare knowledge and enlightenment to sewage, this tells us why Egypt is at the tail of nations. If we do not have a knowledge revolution, then we will remain this way for a very long time.

I went on about how building human minds is as important as building roads and infrastructure. It is not either/or, we should do both. Once we give people access to knowledge they will be able to build the roads and fix the sewage. Then the Minister of Culture jumped up and said to the Prime Minister, ‘Sir, Egypt is not in need of a knowledge revolution.’ I answered, ‘Really? This is what the Minister of Culture thinks? Can you say that publicly? You must be kidding me’. He also said that people in villages were too simple to be able to access this EKB. I told him, ‘A reason we are putting the EKB together is to give those people the justice they are deprived of’.

I am sure they were annoyed with me and wondered, ‘Who is this guy who has the nerve to talk to us like that? He must be protected by the President’. It later turned out that a reason they wanted to discredit the EKB was because they had spent the funds allocated to it on other things. When the President found out, he forced the Prime Minister to pay the money for the EKB. But I think there were other issues at play. First, they were not imagining what the EKB was. They thought it was just a bunch of direct subscriptions, but it was more than that. Second, they did not see or imagine how it would impact K-12 education and higher education and research. At the time, it was couched as a battle for resources, which was understandable. If you are a minister of transportation, you want roads. If you are a minister of supplies, you want more money for wheat and rice. The President saw the value of investing in this and from 2016 until now (2022), he paid the bill to make it available and free to all citizens.⁹ I think this is one of the most respectable projects from a political leadership point of view. I give the President a lot of credit. He understood this and he agreed to this project.

4. Knowledge Equity and Education

LH How has the EKB evolved since its launch in 2016?

⁹ In 2023, the Egyptian Knowledge Bank moved from being a Presidential Project, to being under the auspices of the Ministry of Higher Education and Scientific Research, which meant its funding was no longer secured by the office of the President.

TS Part of the original idea was to help post-graduate students and researchers in Egypt. The EKB contains reviewed, curated material. This is important. It is not like Coursera. People in universities used to suffer a lot to access a single published paper. If you wanted to download a paper without a subscription, you would have to pay thirty dollars per article—not per journal, per article. In the last six years (2016-2022), Egyptians downloaded half a billion articles through the EKB, freely, without paying. If you multiply half a billion by thirty dollars, you can see the actual price of this content that was made available freely to the people. But the EKB was never just a subscription service. It kept growing and changing.

It has become a publishing house. We published 700 Egyptian journals last year. Many are being recognized in Scopus and the Web of Science, and made it into the international rankings. The rankings of Egyptian universities have consequently improved tremendously over the past five years. The EKB platform also provides training for university faculty in all fields; in pharmacy, biology, chemistry, literature, you name it, including things like how to write papers. I worked with the Ministry of Health to do the Board Exam for doctors. Now we added solutions like exam platforms and banks of questions for doctors. We have a Learning Management System (LMS) with courses in anatomy. We have seen a lot of advances since the start of the EKB. The concept of the Knowledge Bank grew a lot, especially after I became Minister.

LH When you became Minister of Education, how did you adapt the EKB to serve students in K-12?

TS I thought that if we really wanted to provide something for all one hundred million citizens, we should not focus just on scientific journals, but on the general reading public, people of all ages, men and women, young and old. We got Britannica, Discovery, National Geographic Magazines, things in Arabic, and others. It is a dynamic work that keeps growing in terms of acquisitions (see Fig. 4.3). When I went to the Ministry of Education, I thought I could use this as a platform and have digital material customized to the curricula. We knew students were online, but they were not looking at the EKB. I guess they were busy with Instagram, Twitter, and other social media.

So, my idea was to link the EKB to school materials so that students would have to go there.



Fig. 4.3 Ibn Al-Nafis (1213-1288) featured on the Egyptian Knowledge Bank, 2018, Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Ibn_al-Nafis_on_the_Egyptian_Knowledge_Bank.jpg

LH From 2018, all students entering high school (Grade 10) were given government issued Samsung tablets. Did you intend for them to use them to access the EKB?

TS Yes, the main reason we gave high-schoolers tablets was so that they could access materials on the EKB. They could not say they did not have Internet or a computer. Everyone had the same tool to get there. Once we got them to the EKB, we thought maybe 20% would get hooked. A good student would discover an ocean of knowledge there, and learn how to research. And it worked! The numbers increased exponentially. In fact, today in 2022, we have statistics that show that the highest rates of EKB access are from students in the K-12 system. You know, we have farmers with their iPads sitting barefooted in a field, having access to this great material. And that is beautiful. Those are the ones who appreciate this service more than anybody. That pleases me

tremendously. So if anybody is interested in learning, at least those tools make it much easier.

LH In 2019 when schools closed due to the COVID-19 pandemic, Egypt seemed relatively well prepared to transition to online schooling. How did you leverage the EKB for online and hybrid learning?

TS Well actually, COVID-19 helped us a lot because people accepted things they would not have accepted in normal situations. We put a Learning Management System (LMS) on the EKB, and that saved us during the pandemic. That was actually a blessing, I mean in a way. Not for kids in the primary years (Grades 1-6) because the younger ones really need school and those kids lost a lot, for sure. Younger children should spend more time in school, be with friends, learn ethics and values, build their character. It is not just about knowledge. But as they grow, they can depend on online stuff more. I am talking about older kids in Grade 7 and above. They learned new ways and got used to looking at digital platforms, so that was a big improvement. Today (2022), the LMS that we used for K-12 education has been given to higher education in twenty-seven universities. Over 542 colleges with different disciplines are now building courses to populate the LMS in medicine, engineering, and many other subjects. This is lovely, this is the dream.

5. The Future of the EKB

LH Is the EKB a sustainable project in terms of its business model? Is it considered a purely public funded project, or do you see it becoming privatized down the road?

TS That is a good question. Today (September 2022), it is still covered by the government. But at some point, it will need to be self-sustaining. Four years after we started this, the President asked, 'Do you think we can sustain this if we keep paying for it. I think you will have this battle looking for resources every single year'. It is true that at the beginning of every fiscal year we had the same conversation. He said we have to find ways to generate money to at least make it self-sufficient. It is not easy because it was built as a service to people. We cannot ask people to pay for it. I do not want it to be a service only for those who can pay. This is a dilemma.

We gained a lot of know-how while we were building this project. It became a consultancy service to other branches of government. For example, the Minister of Health got inspired by the LMS we did in the Ministry of Education. He asked if they could have the same Learning Management System to train doctors for the Board exam. When they saw us do electronic exams, they said, 'We have to do this for doctors'. So, we made a complete solution of the LMS, the software itself, populated it with digital content for doctors, added the exam platform, and then the Egyptian board. The exam for doctors is completely the product of the EKB team. Today, about ten or twelve Ministries are receiving services. These range from our Egyptian Central Bank, to the Ministry of Interior, to the military. The Egyptian genome project is hosted on it, as is the open access project. What happens is that the EKB sells those services to government branches for a ten percent margin. We use it to support the subscriptions to take the burden off. We are still not breaking even, of course, because it is not a business. Some ten or twelve ministries in Egypt are now partners in the EKB, including the Ministries of Justice and Environment.

LH The concept of the EKB is to make knowledge resources free for the public. So far, it has been limited to Egypt. Are there plans to make it available to other countries?

TS I think the project will be more sustainable if adopted by other countries, if it goes beyond the national borders. I think it is ready to do that in the near future. The interest is all over, but we do not have a mechanism to do this. A big part has to do with the publishers. They worry about their markets in other countries. They are business people and what they care about at the end of the day is how much they are making. There is also a political component. For instance, the Saudis want to merge their digital library with the EKB. But all these discussions get locked by political barriers. It is very hard for a minister of another country to say I am paying the government of Egypt to access the EKB. No way. It is easier for a country to join a UN agency than to get engaged in a government to government contract, which is near impossible because of political sensitivity around payments. But if UNESCO was the hub, they could subscribe to it. A minister in Kenya, or Saudi Arabia, or Sharjah, could sign a contract and make a payment to a UN agency. I am talking to UNESCO about making the EKB a global platform. The main work would be to have a mechanism for the money

and the copyrights. Once a country is subscribed, they will start asking for more material to be added and that will keep it growing. All this investment would be shared between different countries.¹⁰

The EKB future is really what we are working on. It will open doors for other collaborations. We can prepare the digital content being used by students in other countries for core subjects like science, math, and languages. Imagine, we could have professors from different universities, in many languages, use this platform. Imagine that grows to a multilingual incredible thing. So, if I am a student in medicine, I have my pick. I can look at any course I like. And they would all be free.

LH Do you think this initiative has been well understood and appreciated?

TS The irony is that this project is well respected in many circles outside of Egypt, but the people we made it for, they are throwing stones at us. People here say, 'Why are you putting money into this? Why do we need that? Why do you not print books like the old days?' I try to tell them, 'I am getting you stuff from Britannica and other top education publishers. We are adding fifty to sixty digital objects to the lessons that were in your old printed book'. Their response is, 'No I want the printed book. I want to stay in the ghettos. Do not put me in the World Trade Center'.

The EKB is much more appreciated outside Egypt. I had dinner with colleagues at the International Finance Facility for Education (<https://iff-education.org/>). They have ten billion dollars to give as education grants. Stefania Giannini, the Assistant Director-General for Education said they were going to present the EKB as the flagship education project. Then Jaime Saavedra (Global Director, Education, World Bank) and UNICEF said that they would present Education 2.0 as the exemplary modern system to follow. UNESCO has made a decision to put forward a resolution in the executive board in front of the Secretary General in New York and like fifty heads of state to make the Egyptian Knowledge Bank a flagship project for other nations to follow.

I am really convinced that investing in learning and knowledge will have a positive impact on everything else. The President is interested in infrastructure development like roads and bridges and building new

¹⁰ Public usage of the EKB has remained steady with about roughly 4.5 million people registered on the platform in 2024, with the highest user rate among those aged fifteen to twenty-two. However, with a population of 114 million (2014) there is much room for growth (El Souefi 2024).

cities. Whether people agree or disagree with these priorities, my claim is that you can build the best highways, but whether people drive on them correctly is a different story. Because when somebody drives in the opposite direction, or disregards the lanes, it will cause accidents and ruin those structures. If you do not invest in education, the same culture will destroy all of that. When I was young, I was influenced by Taha Hussein and others. But along the way, maybe I went to places at the right time, I was influenced by the emerging technologies. Taha Hussein wanted knowledge to be free with no boundaries. That is what we have been doing with the EKB. This has always been my dream.

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7. Companion Videos

Video 4.1 Tarek Shawki: 'Road to the Egyptian Knowledge Bank (EKB)', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 6 August 2023, YouTube, <https://www.youtube.com/watch?v=t7FRYOZaOaU>

Video 4.2 Tarek Shawki: 'Being at the University of Illinois during the Birth of the Internet', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 4 August 2023, YouTube, <https://www.youtube.com/watch?v=QmCRIsRZY0U>

Video 4.3 Tarek Shawki: 'Learning for Life', TEDxCairo, 1 October 2015, YouTube, <https://www.youtube.com/watch?v=JL0VrLGsU1E>

5. ‘We Break the Rules’: Interview with Deena Boraie

*Linda Herrera*¹

Abstract

Deena Boraie, Senior Advisor for Assessment, Examinations, and Curriculum at the Ministry of Education (2017-2022), recounts how she joined the advisory team of the Minister of Education Tarek Shawki with a mission to ‘transform’, rather than ‘reform’ the education system. She explains their unorthodox approach to educational change and how they ‘broke the rules’ by, for example, foregoing piloting and consultations with the communities on the ground. She outlines the two main pillars of the reform, namely, to build a new curriculum and teaching methodology starting with the early primary years, and to change the structure and design of the Thanaweya Amma high school exit/university entrance exam which drives the system into rote memorization and superficial learning. While they succeeded with the former, the later faced public and political pushback and they were only able to make incremental inroads.

Keywords

American University in Cairo, curriculum reform, evaluation, impact assessment, international donors, piloting, professional development, school-based reform, teacher training, testing, Thanaweya Amma, TOEFL, World Bank, USAID

1 This interview took place on 10 and 14 June 2021 in Cairo.

1. A Career in Education and Assessment

LH What positions do you currently hold at the American University in Cairo (AUC) and the Ministry of Education and Technical Education?

DB² I am the Vice President for Student Life at the American University in Cairo and the Senior Advisor for Assessment, Examinations and Curriculum at the Ministry of Education. I am also overseeing the Continuous Professional Development (CPD) of teachers, but it is not in my title. My colleague Nelly (El Zayat) works closely with me on CPD and the curriculum (see Chapter 7 in this volume).

LH I know your first degree was in chemistry. How did you end up working in educational assessments?

DB When I look back, I realize that life is unpredictable and hence, very interesting. At one point I imagined I was going to be the next Madame Curie, enjoying the chemistry lab. I was working on my master's degree in chemistry after I got married. One day as I was walking through the campus of AUC, I saw an advertisement, 'Free training course teaching English'. The course was offered by the Division of Public Service (DPS), which is now called the School of Continuing Education. If you passed this course, you would be able to teach. I was just a lab assistant at that time doing my master's degree and I was attracted to, you know, more money. So, I went through the teacher English language training course, and I did well. I passed my demo, and I started teaching. I was teaching in the lab during the day and teaching English in the evening.

Back then in the 1980s, I was in my late twenties and my students were adults. They were much older than me. I honestly fell in love with teaching these lovely Egyptians who wanted to learn English. And so, I did both chemistry and teaching English. When I finished my master's degree, I thought about doing a PhD in the UK in chemistry. At the same time, DPS offered me a fellowship to do a second master's degree in teaching English. I really loved teaching English, so I took the fellowship.

2 Deena Boraie was Senior Advisor for Assessment, Examinations, and Curriculum at the Ministry of Education and Technical Education from 2017 to 2022. For a comprehensive account of her professional life, see her LinkedIn profile (<https://eg.linkedin.com/in/deena-boraie-36b75410>).

My science background sort of surfaced while I was doing my master's degree. I was introduced into language testing with my professor, Fred Perry.³ His area of expertise was not quite in psychometrics but in education measurement. He identified my scientific skills and could tell I loved numbers, unlike many of my classmates who seemed to fear them. That is when my passion for language assessment and testing started. I found that this specialization fit me very well. Later, after finishing the master's, I took another course with him on advanced testing. That is where it all began.

LH Did you make a full professional transition to language and assessment?

DB Yes. I was hired full-time in the English Language Institute (ELI) at AUC. I was given release time to work with Professor Perry in the testing unit. Back then we used to develop the English language admissions test in-house for incoming AUC students. The IELTS (International English Language Testing System) and the TOEFL (Teaching English as a Foreign Language) were not yet recognized by AUC. I worked with a wonderful assessment specialist named Rozanne Hozayen who taught me all the practical hands-on skills for designing tests, evaluating test items, reviewing the whole process from A to Z. I had both the theoretical background and the practical experience. That is how I learned to be a good language testing professional. That is my story in terms of my area of specialization.

I received a promotion to build the testing unit at the Center for Adult and Continued Education (CACE) which became the School of Continuing Education (SCE). This was my first real administrative position. I created the admissions test for the school and was a coordinator for testing in the English language program. I then became head of the Testing Unit and ran it for ten years. CACE consumed my life. I was doing a lot of work. I had this dream to do my Ph.D., but this meant I had to lessen my admin load. So, when Fred Perry gave me the opportunity to come back to the academic side of the university to work under him, I said yes, right away. My main task was to oversee the university's English language admissions tests for undergraduates

3 As of 2024, Fred L. Perry was a professor emeritus in the English Language Institute at The American University in Cairo. For more information, see the AUC website listing (<https://www.aucegypt.edu/fac/fred-perry>).

and graduates and to create new forms every year. Student admissions work happens in cycles which meant I had heavy work at certain times but not year-round. This is when I started my whole series of education consultancies which was allowed. These became my parallel life. I was also able to finish my doctoral degree.

LH In what ways did consulting in education projects prepare you for the advising work you would eventually do with the Ministry of Education?

DB Through my consultancies, I started learning about the education context in Egypt. I worked with almost all the agencies at that time. I worked at the World Bank as a monitoring and evaluation consultant and went on several missions to review the outcomes and impacts of their projects. I learned a lot from their local and international consultants. I also worked as a consultant with the Canadian International Development Agency (CIDA) as their education performance management expert. It was a two-year consultancy from 2006-2008 and they loaned me to the Ministry of Education as a strategic planning consultant to write one chapter of their strategic plan. At that time, there was a visionary deputy minister of education, Dr. Hassan El-Bilawi,⁴ who had a brand-new vision to change the K-12 education system. It was a school-based vision with all the reform strategies focused on the school. I wrote the curriculum chapter for their new strategic plan. I also worked with USAID on several consultancies on the impact of teacher training, testing, and evaluation of teachers and students, validation of performance standards for pre-service teachers in faculties of education, and an impact assessment of the Professional Academy of Teachers (PAT). Through these experiences, I got to know and understand how public schools and teachers work. I also learned a lot about how higher education works.

4 Dr. Hassan El-Bilawi (PhD University of Pittsburgh, 1980) is a leading professor of Sociology of Education in Egypt based at Helwan University. He served as Chairman of the Committee of Teacher Education Sector at the Supreme Council of Egyptian Universities of the Ministry of Higher Education, and Secretary General of the Arab Council for Childhood and Development (ACCD). For further information on his former positions, see <https://mbrf.ae/literacychallenge/en/speakers/dr-hassan-hussein-el-bilawi>

I maintained my base at AUC which has given me a lot of insights into American education, its strengths versus what we are doing in public education in our country. At AUC I rose through the ranks and became a Dean of the School of Continuing Education, and then moved to my current position as Vice President for Student Affairs.

LH Have you ever taught in an Egyptian university?

DB Yes, I taught for fifteen years in Cairo University in their master's and Ph.D. programs. This gave me insights into our public universities. For example, the classrooms were very different from what I was used to. I taught from a small, elevated stage. Students are seated in rows of benches like pews in a church. That was a fascinating experience for me. I loved my experience teaching in Cairo University and my students and academic colleagues were wonderful.

2. On Becoming Senior Advisor to the Ministry of Education

LH What is your current arrangement with the Ministry of Education? Are you hired as an advisor?

DB What I am doing now as an advisor is pro bono, my service to Egypt. I have been working as an advisor since 2017, before Dr. Tarek started as minister. At that time, President El-Sisi assigned him to head the Presidential Councils and to start a new program called the Presidential Leadership Program (PLP) for youth. Because of my expertise as a testing and evaluation consultant, he called me to design the assessment tools for the program. These included an English test, the interviews, and so on. That was very successful, and this program was transformed into an institutional entity. It has survived and is still working well. They have now added an Executive PLP program, which is also very successful. When Dr. Tarek became minister, he wanted me to leave AUC to work with him, but I persuaded him that I could handle both jobs. It has been five years now, and it is working. So that is my history, always working with Egypt's education systems on the side, from this wonderful institution, AUC.

LH How did you initially get to know Tarek Shawki?

DB As I mentioned, I was Dean of the School of Continuing Education at AUC and sat on the Provost's Council. Dr. Tarek, who was the Dean of the School of Sciences and Engineering, was also on the Provost's Council. That is where we met, and where we clicked. We would meet for coffee and talk about my passion for education assessment. That was between 2013-2014. Many years ago, at UNESCO, he headed the project for creating a framework for teachers' IT skills. He has always been deeply passionate about ICT and education.⁵ That is the story of how I came to be here now as a senior advisor.

3. Reimagining the Education System from Scratch

LH When Dr. Tarek was appointed Minister of Education in 2017, he had a vision to rebuild the K-12 system but did not have a specific blueprint for how to do it. What was the role of his advisors in the reform? Did you work together as a team?

DB When Dr. Tarek became minister, he created what he called the 'Dream Team'. There were about eight or ten of us, I cannot remember the exact number of advisors because very few are left (see Fig. 5.1). I think Nelly (El Zayat) and I are the only two left standing. There is also Shireen who is running the office now. When we started, we used to meet at the Ministry of Education building in Zamalek where the minister has an office. We met around a long table until they renovated his office at the Ministry (in downtown Cairo). I remember at those meetings he always talked about the blank sheet of paper, meaning we would start from scratch. He is an engineer, so he looks at a problem logically. He concluded that we were not going to do an analysis of the past because reforms have been done over and over again, and we still had deep problems with our system. About a year before he became minister there was a national outcry about Egypt's low educational rankings and poor performance on international assessments. He would

5 Tarek Shawki was Director for the Regional UNESCO Bureau for Science and Technology in Arab States based in Cairo (2008-2012), and Chief of the Sector for ICTs in Education, Science and Culture, based in Paris (2005-2008).

tell us to start brainstorming on how we could approach the education system in a different way, something completely different. That is how the new system was born. We all sat together and brainstormed.

The traditional way was that you had to have these massive documents with extensive plans and frameworks. We decided we were not going to do that. Instead, we came up with a very crisp document, ('Education 2.0: Vision and Strategy. Egypt's Transformation Program 2018-2030').⁶ We decided we had to be flexible because there are always assumptions when you set plans. However, when you go to implement them, they do not work. So, we decided to make it very lean and mean. This way, we were able to remove, add, delete, and develop plans and strategies as we went along. This is where I think we have been very unique.



Fig. 5.1 Tarek Shawki (center) with his team of advisors, 2018. Deena Boraie is seventh from right. Photo courtesy of Deena Boraie.

LH In the early days when you were working from a blank slate, what did you especially want to change? What were the priorities?

DB Two main things were included in our pillars. The first was the Thanaweya Amma, of course. To me as an assessment person, this test

6 This document was a concept note by the title, 'Education 2.0: Vision and Strategy. Egypt's Transformation Program (2018-2030)' issued May 2018. The document can be accessed via the website of the Education 2.0 Research and Documentation Project at <https://drive.google.com/file/d/1gO8G5J3meYhBi7n7GIL4gNjf4EW8Eku/view>

is a horror. The problem is not about having an admissions test for the university. There is a lot of research showing that Egyptians view the Tansiq system, the admissions platform to enter higher education, as fair. For me as an educator, the main awful issue is the actual structure and design of the test. It drives the system into rote memorization and very superficial learning. Education systems internationally moved away from memorization to understanding and problem solving a long time ago. Learning and education should be about deep learning and skills development. This test has nothing to do with either of these.

My second dream was that we ‘transform’, not ‘reform’ the system. Transformation starts from that completely blank sheet. Reform is fixing. We are reforming the Thanaweya Amma because we are just changing the test, not the curriculum. That will come later. The high school curriculum still runs on the Education 1.0 system. The transformation is coming with new Education 2.0 curriculum which we started rolling out for KG to Grade 3. We have done professional development for teachers and curriculum training at our national curriculum center (Center for Curriculum and Instructional Materials Development) because 2.0 is based on a totally new methodology. If you have seen the books, the methodology, the teacher’s guides, you can say the transformation is to the max. Textbooks used to be commissioned through a system of bribes and kickbacks. They were not really professional, and the curriculum was weak compared to international standards. Now we have a very good group of curriculum designers here who have learned a lot.

4. Redefining the Relationship with Donors

LH A lot of the work you are doing involves international cooperation with various donors and partners. From what I have observed, you work in very different ways compared to your predecessors. Are you trying to redefine the rules of engagement with international partners?

DB Yes, we are completely different. We break the rules, we really do. The donors make assumptions about us, categorize us as a ‘low-income country’, but we refuse these labels. We want to aim high and not be put in the box of the low-income countries. If we set the bar really high, we will be better off as a country.

LH What are some instances of how you have pushed back against the 'low-income' country label?

DB I can start with the World Bank. They have a group of experts who developed this instrument, the 'Teachers' Evaluation Performance Instrument'. They think it is wonderful because it was developed for low-income countries. I took great exception to how they assume again, that one size fits all. What I mind is having it imposed on us because they categorize us as a 'lower-middle-income' country. That is not a justification.

With the World Bank, because it is a loan, we get the money based on DLIs (Distribution Linked Indicators) and DLRs (Disbursement Linked Results) which we have agreed upon (see Moreno 2018). And we deliver results. For example, in Component 2 about the teachers, we are developing standards and the Continuous Professional Development (CPD) system, including licensing. Once that system is developed, we get X million dollars. That is how it works. They also give us advice and are pushing us to adopt this teacher evaluation tool and guiding us in a certain direction. That is fine, but it is *our* right to define where we want to go, even if it takes us a decade or two decades, which it will of course. We cannot do it in less time. This is how we are at odds with some of these partners, even though they are well-intentioned no-doubt.

I have also experienced something similar with USAID (United States Agency for International Development) who I worked with over many years as a consultant. They have this methodology they use in Egypt and with other 'low-income' countries throughout Africa and around the world. Their idea is to spend time researching and collecting data from teachers and to do a needs assessment. We are supposed to follow a needs assessment regardless of whether it makes sense. The good news is that now (in 2021), the USAID Teach for Tomorrow project seems to get it.⁷ They acknowledge that USAID has not succeeded in changing or enhancing our education system, so this time around they are listening to us and doing what we are asking. We want to be treated with the same expectations as people in the West because in the end, humans will rise to the highest of expectations.

⁷ In the interest of full disclosure, Linda Herrera worked with the USAID Teach for Tomorrow project as an international advisor from 2021 to 2023.

Not all people maybe, but we have those geniuses. I am telling you, we have young people and teachers, those exceptional individuals who can move a whole country.

LH How do you get international partners to do things your way and in support of the new vision?

DB One thing is I push back, and hard. For example, there was a case where USAID was trying to impose something on us that we did not need. Dr. Tarek met with them, and he was very polite. He told them in a nice way, ‘No thank you, we do not want USAID. We do not want any more money’. He told them that if they wanted to start a project, they should do what we need. They should not continue with those fairytales. It is always the same: they bring a consultant, the consultant produces a report, designs a framework based on some weird project that is out of context and has nothing to do with what we need. Actually, it is the context that determines success. That is why we have not been successful all these years with tons of money being poured into this country. But now, we have been empowered by a minister who really speaks his mind. He tells them what we want, not what they want.

So, they listened. We asked USAID to help us with our Continuous Professional Development framework for teachers, and they came to us with Teach for Tomorrow. They tailored it to what we wanted. So, USAID now is aligned. More recently, they have come out with a second project for higher education called the Egypt Teacher Excellence Initiative. They have three pillars in that new project, and pillar number two is having an Education 2.0 post-graduate diploma. So yes, they have really changed their approach. They are coming to us now and saying, ‘What do you need?’ So, it has dramatically changed, more than I have ever seen in my life throughout my career. It is massive.⁸

LH There are a number of private companies like Pearson, Discovery, and other publishers working in the Egyptian education space. What issues come up in dealing with them?

8 Editor's note: In 2025, the US government froze foreign aid and cancelled most USAID programs around the world, including its education projects in Egypt.

DB Private companies are easier because they are about money. They will do what you want. Donors are different. They can be really stubborn. They have an idea in mind and want to implement something because it worked in Pakistan, or it worked in Nigeria. With private companies it is a different relationship.

LH This goes back to your role as advisor to the minister. It seems like some of what you do is to set the ground for Dr. Tarek to be able to implement his plans. Is that an accurate description?

DB Dr. Tarek is really the very high level, the vision maker. People misunderstand the vision and say, 'We have never done it like this', I say, 'I know, but we want to do it this way'. So, I handle all of these conversations which take time. He does not have the time for this. He cannot go down and convince every single partner, that is my role, to keep explaining and re-explaining in different ways. And as a teacher, I am used to repeating myself in different ways until they get it. I am always there putting out fires. The international experts we work with think we are very chaotic. Well, in fact we work in absolute chaos compared to the West. They cannot handle this chaos, so part of what I do is calm down partners and explain things. I understand both sides because I am a mix, half Egyptian and half British. I see the two cultures. I make things happen. I am maybe an enhancer? I do not know what to call it. I push to get things done.

5. The Case Against Piloting

LH You have made a case against piloting in favor of implementing the reforms at scale and at a fast pace. Why do you feel so strongly about this?

DS Yes, that is true. We decided against the old traditional approach of piloting. Since the 1990s and 2000s, we have done hundreds of pilots by all partner agencies. Depending on their budget they would choose four, eight, or twelve governorates. There is no right or real rationale, the choice depends on the budgets. The pilot always works well, and we have celebrations. I have attended many of them, and everyone is delighted! We have the M&E (monitoring and evaluation) experts who

show us the fabulous results from the pre-and the post-pilot. And then, everybody leaves. But I am still around.

Something always happens after these pilots, and it is heartbreaking. The teachers we have worked with on these projects leave the ministry to the private sector. They get hired right away. We do such a wonderful job transforming the teachers that they cannot stand their environment anymore. They go and work in private schools and get much more money, or they go to work in the Gulf countries. So, you see, our partners have donated the money, given us a lot of support, and have very good intentions. But at the end of the day, the impact is minimal and in the wrong direction. The real impact is a brain drain which is not a good idea. That is why this time we wanted to do things dramatically different.

You can imagine the resistance. For instance, there was a colleague from USAID who was horrified that we did not do pilots. I was tough with her and said something to the effect that we have done many pilots that did not ultimately work, so why would you expect us to keep repeating the same methodology? We also got pushback from the Development Partners Group (DPG). They kept asking, 'Where is the pilot? You cannot just throw a curriculum'. I told them, 'Yes, we can', and we did.

END OF PART ONE. SEE CHAPTER 6 FOR PART TWO OF THE INTERVIEW WITH DEENA BORAIE

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7. Companion Videos

Video 5.1 Deena Boraie and Nelly El Zayat: 'Developing a New Curriculum', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 17 June 2021, YouTube, <https://www.youtube.com/watch?v=86ZiLZuEi2k>

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6. Rethinking Assessments for the Digital Age: Interview with Deena Boraie

*Linda Herrera*¹

Abstract

Deena Boraie, Senior Advisor for Assessment, Examinations, and Curriculum (2017-2022), worked with the Minister of Education Tarek Shawki to revise the system of assessments. They set out to mitigate the corrosive effects of high-stakes exams which contribute to a system of memorization in place of critical thinking and drive an unregulated market of private lessons. They introduced electronic exams, new problem-solving questions, and attempted to move towards a cumulative Grade Point Average (GPA) system for high school, but encountered roadblocks. During the COVID-19 pandemic, they introduced research projects in lieu of exams, though that experiment became compromised as people bought and sold projects in large numbers. Finally, Boraie discusses digital transformation and how teachers must adjust to new realities.

Keywords

assessments, cumulative grade, digital transformation, electronic exams, high-stakes testing, private lessons, Thanaweya Amma, TIMSS, PIRLS

1 This interview took place on 10 and 14 June 2021 in Cairo.

1. High-Stakes Exams and the Problem of Private Lessons

LH A feature of the education system in Egypt has been its unregulated system of private lessons, or the existence of a 'shadow education system'. What is your explanation of why private lessons persist despite numerous interventions over the years to curb them?

DB² First, there is the economic component of teachers who have not been paid well for many years. In fact, a former minister of education, Dr. Hussein Kamal Bahaa El-Din (1991-2004) famously said, 'We pretend to pay the teachers, and they pretend to teach'.³ I love this statement because it is exactly true until today. That is the situation. Teachers do not teach. I mean, they do not teach in schools. So, how do they teach? There is the whole parallel economy, the system of private lessons that has effectively broken the education system. Learning does not happen at the school. Teachers give private lessons to their own students outside of school. It has become a corrupt system. Teachers have become corrupt, and they do not even know that they are corrupt.

Teachers must be models of ethics and integrity. In my own code of ethics as a teacher, it is forbidden (*haram*) for me to give a private lesson to my student because I am grading my student. The whole system, the whole teaching profession, has become terribly corrupt. But I also understand poverty, which is a horrible thing. It is easy for me sit in this luxurious environment at AUC (American University in Cairo) to judge others. It is a dilemma, and it is very hard to come to terms with it.

The Thanaweya Amma is the root cause of all this. And there is also the Grade 9 exam (at the end of middle school). The fact is that we have this difficult situation because of the high-stakes exams. We cannot dismantle everything, and we could not touch the holy Thanaweya Amma (which is protected by law). Instead, we tried to come up with a

2 Deena Boraie was Senior Advisor for Assessment, Examinations, and Curriculum at the Ministry of Education and Technical Education from 2017 to 2022. For a comprehensive account of her professional life, see her LinkedIn profile (<https://eg.linkedin.com/in/deena-boraie-36b75410>).

3 The late Hussein Kamal Bahaa El-Din, former professor of paediatrics at Cairo University, was the longest serving Minister of Education in Egypt, having held the post from 1991-2004.

new system where students have a cumulative grade based on multiple opportunities.

LH What was the reasoning behind trying to implement a cumulative grade system?

DB We wanted to move away from that one-shot exam because that is what is killing students. Anyone can do badly on a test on a particular day. There should be multiple opportunities to take a high-stakes test, at least twice a year as is the system in many countries. This was the model that we came up with. We designed a cumulative system where the student would gain a percentage in Grade 10 because we want them to actually go to school, we have a problem with high student absenteeism, an additional percentage in Grade 11, and another in Grade 12. These three percentages would constitute the majority of the total cumulative score. The resistance and pushback were unbelievable.

LH Why do you think there was such fierce resistance to the idea of a cumulative grade? Did that take you and Dr. Tarek by surprise?

DB Of course, we expected resistance, but not to that extent. It was almost like life or death for them. It was hurtful to hear all the anger. We were thinking academically, I mean logically. We thought we would be easing the pressure by not putting everything in one basket. We were giving students multiple opportunities. But we did not realize how private lessons had become a nightmare, how much teachers were blackmailing or enforcing them on their students, and how it had become a huge financial issue. From the parents' perspective, the concept of a cumulative grade over three years was horrifying. They said: 'Oh my God, I saved for lessons for one difficult year for my daughter or son to pass the Thanaweya Amma, and now you are going to make my life three years of hell trying to get the money for the private lessons!' That level of financial pressure did not occur to us, and it is valid. That is why we started backing down on the dream. We also wanted to change the Education Law (a prerequisite to changing the Thanaweya Amma) but we failed because the parliament was opposed to this. And yet we have continued, we have not stopped. We had to go back to rethink and redo the changes because our aim was not about getting our way but

about ensuring deep learning. That is what we have been after, getting students to acquire skills, trying to move them away from memorizing.

LH Without the political support from the parliament, and with parents pushing back against your initiatives, what means do you have in your toolkit to revise the Thanaweya Amma?

DB We started a redesign of the Thanaweya Amma exam itself. My recommendation to Dr. Tarek was not to try to do anything with the existing, '1.0' curriculum. We cannot undo everything fast or redo everything fast. We thought perhaps it would help to give students multiple attempts to sit the exam, but only if the higher education system would allow this. So, that is one of the ideas we will look at again. We also need to consider new subjects in high school because there are new subjects nowadays like Artificial Intelligence (AI), Robotics, and Information Technology (IT). There are subject-specific areas that we can introduce into the curriculum so that students are ready for the new world. That is what we are planning and how we are going to approach the Thanaweya Amma. We are also changing the questions away from memorization towards more critical thinking.

LH How can just changing the types of questions on the Thanaweya Amma foster more critical thinking?

DB I am going to give you a simple example. In the old exam there would be a question in biology to define photosynthesis. In the new approach, instead of asking for a definition, the exam will provide a scenario or a description of photosynthesis in a couple of sentences, and the question will ask them to define what it is. So, whereas we used to measure memorization, now we are measuring understanding. It is that simple. In the Arabic or English language exams, students were given a story pulled from one of their textbooks. They would memorize all the stories. The whole purpose of stories in a language curriculum is to teach students the skill of comprehension, not memorization (see Chapter 16 in this volume). So, we are trying now to focus on assessing reading and writing skills, not memorization of texts. The Arabic and English exams no longer have a story from the textbook. We give them an unseen text, and we expect them to answer questions to make sure they know how to read Arabic or English. From an applied linguistics

point of view, this is the change. We are driving the learning and the teaching in a better direction than the old Thanaweya Amma. Even though the curriculum needs to change, we are just doing that tweak in the exam questions, and for here, that is a massive change. In a few days we are going to start the practice tests, so this is where we are at now. Change is really hard.

LH Why do you think it is so difficult to change the Thanaweya Amma?

DB In general, it is hard to change the education system. Education itself is conservative. I have a theory that introducing change in our Egyptian context is always dramatic. It is a huge undertaking to change the system. And that is why we are very satisfied with that tiny little tweak in the test. This is political because to touch the university admission system (*Tansiq*) you must consider the Ministry of Higher Education and the whole society. And higher education, I think, is even more conservative than K-12. You have professors who are guardians of the system. That is the politics of it.

LH You mentioned the other high-stakes exam that takes place in Grade 9 which determines whether a student will be tracked into a general or technical secondary school. Are you planning to revise that exam too?

DB The Grade 9 exam is like another Thanaweya Amma challenge. Yes, this is the exam that tracks students into either technical education (currently 55%) or general education (45%). If you look at the exam, the way it is designed, the way it is administered, it is an assessment horror story. This exam is not valid, reliable, or fair. To add insult to injury, each governorate designs its own Grade 9 exam. The test specs include only the number of questions and the number of marks per question. There is no focus on learning outcomes, or anything related to the curriculum. It is mainly based on memorization, of course. And what is worse is that the cut-off grade for passing varies across governorates. So, it is a disaster. To me it is the most unfair large-scale test ever.

We have left it for now because we first need to get done with the Thanaweya Amma. I don't know if Dr. Tarek has the bandwidth to start a new battle. Since the Grade 9 exam is administered at the governorate level, all the governors would have to be involved. This means he would likely have twenty-seven governors against him, because in all likelihood

they would not want to change the system. From their perspective, it is all working fine. All the corrupt structures are in place for private lessons, etc. So, we decided to leave it for now.

LH In the absence of being able to change the high-stakes exams which drive the demand for private lessons, what can be done?

DB Nelly (El Zayat) and I would like to propose that we regulate private lessons, that we make them legal. Dr. Tarek did not say no to this, but he said, 'not now'. I do not see the concept of private lessons as inherently wrong. Students are in crowded classrooms and some of them do need additional help from teachers. The problem is the way we leave them to be unethically managed by teachers. We should set up private lesson centers in a legal way so that they pay taxes. This is the right of the country. Teachers should have the opportunity to get extra income, which they need, but they should not teach their own students. We need to legalize a system and regulate it. But this topic is political and there have been lots of counterarguments, especially from the hardliners that private lessons 'are not ethical', full stop. We need to be practical, to balance the politics. This has been going on for too long, you just cannot wipe them out.

LH The private lesson space is expanding with new for-profit digital platforms as well as small-scale online private initiatives. Do you think it is the job of the Ministry to try to regulate them?

DB Even as private lessons go online, we do not have the bandwidth to regulate that space. And for us, the more they go online the better, because this is the way of the future. So, for us, it is very positive. The control is not our problem now. There is another aspect for private education which we are not regulating at all, which is that each private school does what it likes in terms of the platforms they use. We do not have control over the private school online spaces. Private schools serve approximately 7% of the students in the system and so it is not the majority.

2. Designing National Assessments

LH The Ministry partnered with Pearson, a private company, for the national assessments. Were you involved in that decision?

DB It was Dr. Tarek's choice. What I can say is there are several top providers, but he chose Pearson because of their platform. He visited their plant and was very impressed. They have all the technology and know-how that we do not have here yet. We cannot build a platform from scratch. It is just too massive, so we decided we would go for the best. And of course, the important part of the partnership is the developmental part (see Fig. 6.1).



Fig. 6.1 Deena Boraie explaining the assessment platform models at an event for the Egyptian Knowledge Bank, 26 November 2018, Cairo, Egyptian Knowledge Bank Facebook Page, <https://www.facebook.com/photo/?fbid=774633982880344&set=pcb.774634782880264>

LH *Who is Pearson's counterpoint for assessments in Egypt?*

DB We went to the experts in NCEEE (National Center for Examinations and Educational Evaluation). With exams and tests, I am always there as an advisor behind the scenes. But who is doing the work? It is Dr. Ramadan Mohamed Ramadan and Dr. Khaled Mohamed Sayed at NCEEE. I have worked with them in many different capacities over the years. They have great psychometricians. Pearson has taken the NCEEE to the next level. They showed them how to be international, how to

create tests, test blueprints, test maps, and use a computer program that creates tests from the item bank using Pearson's platforms.

LH What is involved in producing national tests?

DB The way to produce tests begins with setting learning outcomes in each subject. Test writers are trained to write test items or questions. The item writers produce many questions for each learning outcome. To produce an exam from a test bank, programmers design a test map which identifies the number and types of questions that need to be assessed. Several test versions can be produced from the item bank. You must have a quality control system per item or question. It is like a factory to produce questions or items for a test bank. As of 2021, NCEEE learned the art and science of test development using the latest technology and methodology. And by the way, this is the first time ever that NCEEE is in charge of the Thanaweya Amma exam.

LH Who used to oversee the Thanaweya Amma before NCEEE took it over?

DB Do you know how the Thanaweya Amma was designed? It was never actually designed by the NCEEE. It was under the supervision of the Ministry of Education person in charge of general education. NCEEE's role was only to produce very brief test specs (specifications) for each subject test. These specs only described the type and number of questions, the distribution of grades for each question, and the overall time allowed for each test. There was no focus on learning outcomes. The lead of every school subject in the Ministry, such as the head of chemistry, the head of physics, the head of English, etc., created a committee (*lajna*) to design the Thanaweya Amma test. After that, they would select two or three university professors for each subject to produce the test questions. The problem was that most of these professors did not have direct contact with schools and schoolteachers on the ground. All the test questions came from the school textbooks, which of course reinforced memorization.

LH Can the NCEEE work independent of Pearson at this stage? Has there been a proper knowledge and technology transfer?

DB Not yet, there is always the big question of technology transfer. The platform itself does not belong to us yet, but our experts know how

to operate it. But what is key is the test, the program that we call the 'test map', that needs programming. I am sure we can get a platform in-house that would house an item bank, but it may take time to set up the other IT components in the system. For the time being we rely on Pearson's support.

LH We know that cheating in exams has been a big problem. Are there ways to design anti-cheating features into the new exam system?

DB The only way to control this uncontrolled cheating is to use this modern approach of multiple-choice questions (MCQs) which are scored by machines. There is no other way forward. That is why we need to change the current law that governs the Thanaweya Amma. The current law is very clear and specifically mandates that only one form of the test can be offered. All students in Egypt must take the same test per subject on the same day in all schools. If we could produce several forms of exams within one exam location, this would minimize cheating. Of course, the changes we propose continue to be resisted.

LH Do you mean the exams would be made up entirely of MCQs with no writing portion? Could this be an instance of solving one problem like minimizing cheating, while creating a different problem by eliminating an assessment of a student's writing?

DB We have not created a problem, we have a problem. I think we have mitigated the problem a little by actually changing the student's mindset. The problem is about the mindset, not the writing. They are going into university with a different mindset. That is what we have done. But then again, I am a language specialist. I keep telling Dr. Tarek, okay, I am very flexible, but for the record, you must know that we are taking a big risk by sending students to university without being sure whether or not they can write Arabic or English. But in a country where change is strongly resisted, we also have to be pragmatic. I see the value of what we have done, and I see the weakness of what we have done, but we cannot have it all. We have to compromise. And we have compromised. Otherwise, we go back to the old system and then we have failed. We have no intention of going back. At the end of the day, in the old system, did they really know how to write? All the writing

topics in the exams came directly from the schoolbooks. They were just memorizing everything. That was not writing either.

LH The other important national assessment occurs in Grade 4 to measure students' numeracy and literacy. Have there been any changes in this benchmark assessment?

DB In fact, another pillar of our plan is that for the first time ever, we are going to have our own national assessment for literacy and numeracy. We have never had one. We always depended on the international ones. But let me be clear, we will continue participating in PIRLS (Progress in International Reading Literacy Study) and TIMSS (Trends in International Mathematics and Science Study) no matter how expensive they are because we want the benchmark. I mean, we are not trying to hide or cover-up our rankings. But at the same time, we need to also be in control of our own strategy.

With the funding and support of the World Bank, we are designing a Grade 4 assessment. We will be running the pre-test in September (2021). We want to do a pre-and post-test to see if Education 2.0 has had an impact on literacy and numeracy. It is a curriculum-based assessment and is more fine-grained than the broad international assessments. We have analyzed the curriculum and are writing up the test items. The most refreshing news I have heard is that Al-Azhar, which is almost a parallel system, wants to participate for the first time ever in our Grade 4 assessment, and hopefully, future assessments. Maybe later Al-Azhar schools will also participate in TIMSS and PIRLS.

3. COVID-19 And the Experiment with Research Projects

LH We are talking now during the COVID-19 pandemic which has disrupted school systems around the world. When schools in Egypt closed in March 2020, you had to come up with a workaround for the end-of-year assessments. Dr. Tarek announced the research projects. What was your role in coming up with this idea and how did you envision it would work?

DB The interesting thing about this experience was that there really was no time to think. We were hit with a situation where we could not

open the schools. We had to react and solve problems. We were running to make platforms and TV channels available. We had to get teachers to record their lessons, while solving all sorts of other problems. In the midst of all this, we needed to change the assessments. We could not have exams in schools, so we tried research projects for Grades 3 to 9. Students were required to produce a research project using online learning resources provided by the Ministry. They could work either individually or in groups of up to five students. Students were given four very broad and general topics to choose from: tourism, water, energy, and health. The research project was supposed to emphasize deep learning rather than memorization and develop students' reading and writing skills. I helped the CCIMD (Center for Curriculum and Instructional Materials Development) design a very simple rubric to make it easy to score these projects consistently for each grade year. This was very well-intentioned and consistent with what we were doing overall.

LH This experiment of projects was a first for Egypt. How did it go, and what did you learn?

DB It turned out to be a total disaster. You can imagine what happened. Projects started becoming a lucrative source of business. We started hearing about projects for sale and the prices being charged for them. Parents were buying projects for their kids. Those parents who could not afford the prices started screaming that it was unfair. Some parents had the guts to just let their kids do the projects on their own, but not many would take that risk. I mean, projects were going for all kinds of prices, and of course we saw the usual divide between rich and poor. The costs ranged enormously across the country. I cannot remember the exact prices, but they were cheaper in certain governorates and astronomical, for example, in the wealthy areas like Rehab (an upscale compound in New Cairo). But the fact remains that projects were for the most part not done by the students. They were done by teachers, by clever entrepreneurs who made quite a lot of money out of this, and by parents. Of course, this was definitely not our intention. It completely missed the purpose of deep learning and developing young people's skills.

The projects became the talk of the town. And in a way, they are an example of how the society resists change. In the parents' minds, the whole purpose of the system is that their kids pass regardless of

whether they learn or not. They will do anything, even corruption and bribery, to get their kids to university. It is very Machiavellian; the ends justify the means. But it has nothing to do with education. Our purpose is always about developing the mind and they do not want that. Of course, we will never repeat it again (see Chapter 25 in this volume).

LH In retrospect, do you see any positive outcomes from the projects? Some students were taking initiatives and posting videos on their social media about how to do the projects. Could this have been a kind of silver lining in this story?

DB I would not say there were positive outcomes, but some positive feedback. Some parents, maybe the more educated parents, actually got their children to do them, but minimally. And there are always the bright and brilliant kids in any system. At the end of the day, to run a country, you need a small percentage who are smart and clever, and we have them. For sure, all over the country you have little geniuses out there who will prevail regardless of anything. They are clever, talented, and have a brain. They will always stand out, so that is normal. But we are talking about the dream of having a system where we will get 80% highly educated, or even better, 100%. As a country, trying to include everyone is a great dream, but it is impossible.

4. Digitizing Teacher Training

LH The Ministry announced that it is moving to a model of online Teacher Continuous Professional Development (CPD).⁴ What is the problem with how teacher training is currently being done?

DB It is not working, and it is corrupt. I can give you some background. Part of the vision of Dr. El-Bilawy, who served as the First Under Secretary to the Ministry of Education (2001-2005), was to create the Professional Academy for Teachers (PAT) which they did through a USAID project. NCEEE received the training and support to design the teacher tests. It was a big experiment. Teachers were given MCQ tests, and I was in the thick of it. For about a year I lived in NCEEE. I must give credit to one

4 See the document, 'Transforming Teachers' (MOETE 2020).

of the international consultants from Croatia named Zarko Vukmirovic⁵ who was helping NCEEE in the assessment component and gave all his know-how to the young people there. The tests were beautifully designed. The NCEEE involved university professors for each subject and administered assessments for a million teachers on five levels. It was brilliant. We created these tests, got scanners, and NCEEE really thrived. I was the lead in assessment. This project eventually failed, but that is another story. The interesting thing is when I returned to work with Dr. Tarek, many of those psychometricians trained at that time still worked in NCEEE. This is very important, the fact that this special cadre of people in the NCEEE and the CCIMD are stable. We knew that NCEEE has this capacity.

The trouble was that early on, Dr. Tarek discovered some terrible corruption in the administration of the teacher training. Secondary school teachers were supposed to receive a training on how to use the Egyptian Knowledge Bank (EKB). The PAT received the funds to do this. By chance, Dr. Tarek was visiting a school, and he asked a teacher. ‘So, how was your EKB training?’ And the teacher had no idea what he was talking about. Dr. Tarek could not believe it, so he asked for an investigation. He found that on paper, the EKB training had been completed and trainers were paid. But it was not real. I mean, maybe some trainings took place, who knows? But at the end of the day, it turned out to be another corrupt structure. And just recently, a few weeks ago, the corrupt head of PAT was removed and sent back to NCEEE because of a terrible scandal in finance. He is back there because he is tenured and it is very hard to fire anyone. But they are compiling the evidence now so perhaps he will be on his way out of the Ministry in a few years. You cannot have someone at the top who is dishonest, even though we know you find this in the whole system. With the new online system, PAT is going to be the implementing body, but we want a completely new design.

LH Was the impetus for moving teacher training online largely due to corruption in the current system?

5 Between 2006-2021, Zarko Vukmirovic was a Principal Psychometrician/ Statistician and Principal Researcher at the American Institutes for Research.

DB Yes, it was that bad. These trainings involve money, tons of money. This is government money going into people's pockets and nothing is really improving on the ground. We needed to find a way to bypass the middleman. We can do this by setting up the system electronically. We need a proper system that will be driven by IT. We want to do Teacher Professional Development mainly online, with mentors who will work to develop the teachers. Assessment will also happen electronically. We are going to try to get teachers to send their videos or whatever they are doing, such as learning objects, lesson plans, students' work, onto an E-portfolio. That will be sent to evaluators who will assess it not knowing who this portfolio belongs to. That is how we want it. Is it perfect? Of course not. But we are not going to do class visits. If we go back to class visits for evaluations and promotions, then we go back to corruption and bribery again. We cannot do fake assessments again. We are setting up this new system with the help of the USAID Teach for Tomorrow project which is designing it (see Chapter 5 in this volume). Then, it is going to go back to PAT to implement it. They will need some training to manage the platforms. We are trying to minimize the corruption.⁶

5. Digital Transformation: Gains and Losses

LH *This brings us to the larger trend of digital transformation, which is happening fast and furious throughout the education system. As a senior advisor, how do you see this transformation in terms of both opportunities and risks?*

DB When we talk about technology we have to keep in mind the digital divide. There are those who have less access, which leaves them at a disadvantage. My concern is that because of the digital divide, we will not be able to include everyone. Technology is a double-edged sword,

6 In 2022, Dr. Tarek Shawki was replaced as Minister of Education during a change of cabinet. The new minister, Dr. Reda Hegazi, revived the Professional Academy of Teachers and appointed a new director, Dr. Zainab Khalife, to oversee a hybrid system of teacher training that involved on-the-ground cascade training with some online components. The USAID Teach for Tomorrow (USAID T4T) project continued to support PAT and adjusted to the changing priorities with the change of Minister. In the interest of full disclosure, Linda Herrera worked as an international consultant for USAID T4T from 2021-2023.

and hence why we plan. I do not know if we will have time to do it, but we want to provide tablets for students in the primary and prep stages because that opens minds and that gives them far more access than just studying from one book. Knowledge is not something that just comes from a book anymore. And yes, it elevates. That is the plan, but we have not done that yet, it is just too complicated. The system is so hard to manage. We started with a plan for five years, but now we see that we need about fifteen years. It just takes triple the time than what we originally anticipated.

LH The government seems to be investing heavily in the digital infrastructure. Are they narrowing the digital divide.

DB Everything will be digitized I think in five to ten years. In fact, the whole country is going in a direction of digitization in our daily life. It will take a while, but it is happening, and it is going very strong. There is a ton of cash floating around so this will be a way to regulate money and taxes. Digitization will decrease corruption, though nothing will ever eliminate it. But we want to minimize it to the extent possible. For example, you can only submit taxes through a digital system. This means that people have to learn how to use the digital systems to pay taxes, and they will get into deep trouble if they do not.

LH Are there any other downsides you see to digital transformation of the education system outside of the digital divide?

DB Um, I am a proponent, so I do not think there are any negatives. I see it as positive. I think it is an additional tool, it is my extra brain. I see it as an enhancement, and I do see enhanced humans later on. If well controlled, it enhances our skills and our ability to do things that we could not do without these machines. So, I only see positive things. But of course, things can turn wrong, as I have seen in those weird science fiction films. I do not know if you follow, but some of them have very interesting ugly outcomes.

LH There is always this question during times of largescale change, of what we should leave behind, and what we should hold onto, carry into the future? So, from your point of view, what do we need to maintain from the past?

DB Ethics. Ethics. We have lost our way in Egypt. We need academic integrity. We have a real problem of academic integrity, plagiarism, and cheating across the board. We recently found out about students in a calculus class who bribed a professor to send the answers through a WhatsApp group during the exam. It is not about machines because we have to live with and manage them. Academic integrity, and integrity in general is what we need to teach to and instill in the majority.

LH I have mixed feelings about how proponents of the new system regularly speak about memorization as if it is inherently negative. The fact that people graduate from the old system with strong powers of memorization and high degrees of mental discipline could also be viewed as impressive, an asset. It seems like in the new system those memory skills will get lost.

DB Yes, and this is as it should be. I do believe in IT and I do not believe in memorization or that it is important. People of my generation, you know, we forget. But you know what, I have my beautiful iPhone. I do not need to remember tons of facts. But I do need to have critical thinking skills. Honestly, I use Google a lot. I met Stephen Wolfram who came up with this fabulous math software called Wolfram Mathematica which students use for calculations, so they do not have to do them by hand. Working with Discovery Education who are supporting us in curriculum design and development, we are actually embedding computational math in Grades 3 and 4. And even in Thanaweya Amma calculus, students need to understand the concepts, but we do not need to teach students how to derive these formulas which can be done by machines. Critical thinking skills are a must, but our brain does not have to be preoccupied with these computing processes because we have machines now to do this for us. So, it is changing. I know diehards and the old generation will find it a bit troubling that we do not know how to do the long division, and we do not know how to do other things by memory. Maybe it is scary, but I am a proponent of change.

LH What about the value of being able to recall a poem by memory?

DB That is our generation. I am really sorry. We have to accept that the younger generation, maybe my grandkids, will not be able to recite poetry. It does not matter. I am fine with that. Honestly, I have changed my mindset completely and embraced change to that extent because it

is a different world. And the world is changing so incredibly rapidly, where machines are part of our life whether we like it or not. Machines are like an extension to humans. I think kids will soon be born with phones in their hands, or some chips embedded in our bodies. This is the new human.

LH Given the unpredictability of a minister's time in office, what are the things you are prioritizing while you still hold this role?

DB We are working to make sure we leave the legacy of the curriculum. Dr. Nawal (director of CCIMD) and her team are digitizing everything, including the curriculum frameworks, so that we leave something behind.⁷ Another thing we are trying to do is to get state approval to change the administrative setup of CCIMD and NCEEE, something you took part in.⁸ It turns out it will be really hard to change NCEEE since it was established by a presidential decree. We want to put the platforms in place for teacher CPD and other things. Later on, new people can come and build on what we have done. They can take Egypt to the next step. Once everything is set up, it will be difficult to undo. And maybe we only have a short amount of time. We do not know how long, it will take three years maybe? A president can remove a minister at any time. If we can achieve these goals, we think we can transform our people. We need research, which is not a thing that is funded even by the agencies.

But what would be really fascinating is to follow this very slow change over time and see how it evolves, because this is absolutely unique. There is nothing like this enormous reform. When you have a whole curriculum imposed, and it has been imposed, the teachers have to change, even in tiny little steps they will change to meet the curriculum. A teacher is a teacher at the end of the day. I have great faith that teachers will get used to it, and eventually master it, but it is going to take a long time. That is my two cents' worth.

7 The curriculum frameworks are available in Arabic and English on the Education 2.0 Research and Documentation website at <https://edu2-egypt.com/curriculum-frameworks>

8 Linda Herrera served as a member of a special advisory ministerial committee in 2020, appointed by Dr. Tarek Shawki and led by Dr. Deena Boraie to reimagine the administrative structures of CCIMD and NCEEE.

6. Addendum: Reflections on Documentation of the Education Reform from February 2023, Six Months after Tarek Shawki Was Removed as Minister of Education

DB Linda, I want to thank you for this documentation research study you are conducting. Without this documentation, all our efforts and contributions to our field may have been lost over time. You have a deep understanding of how education works in developing countries. You truly understand how difficult it is to transform an education system, particularly a large education system such as the one in Egypt, and how slow change takes place in education, in general.

I have come to realize how important it is to document and reflect on what we tried to do to transform Egypt's K-12 education system. When Dr. Tarek was removed so abruptly back in August 2022, to be honest, I was shocked and heartbroken. I was sad because we needed more time to complete what we started, and I knew that some of the strategies we introduced would be reversed. I firmly believe now that we made a great contribution to the field of education and there has been some positive lasting impact on the ground. I am very proud that we were able to introduce a modern, cutting-edge curriculum for grades K-6 in Egypt's public schools. Although the subject leads in the Ministry of Education are now removing parts of the curricula (they call this strategy 'lightening the curriculum') however, the updated and modern core of the new curricula still remain. All the well-trained tenured psychometricians and assessment experts of NCEEE remain and will always be a tremendous asset within the Ministry of Education.⁹ Regarding the Continuous Professional Development (CPD) of teachers, I was delighted to hear that the Minister of Education recently announced that the Ministry is proceeding with the licensure of teachers which was one of our key strategies.

In conclusion, I now realize that as a team of advisors, we had a very important and positive impact on the K-12 education system in Egypt, and I am extremely proud that I was part of this endeavor. Changing

9 For the NCEEE's work on the question banks and electronic exams, see Shawki and Mohamed 2021a and 2021b.

and modernizing a large education system is complex and needs time. In Egypt resistance to change, in general, is very high. What I have learned from this experience is that five years would never be enough to transform Egypt's K-12 education system and that we needed another three to five years. I know that the Ministry now has to continue the curriculum reform we started, and they will be developing the curricula for Grades 7-12 as well as the CPD system for teachers. Thank you for documenting this amazing education experience in Egypt's K-12 system.

7. Education 2.0 Resources

The Education 2.0 books and Teacher's Guides for KG-Grade 6 are available in Arabic and English on the Education 2.0 Research and Documentation Website, <https://edu2-egypt.com/kg1-2>

The Education 2.0 curriculum frameworks are available in Arabic and English on the Education 2.0 Research and Documentation website, <https://edu2-egypt.com/curriculum-frameworks>

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Shawki, Tarek, and Mohamed, Ramadan. 2021b. 'The Question Banks in Egypt Explained', *Education 2.0 Research and Documentation Project*, YouTube, <https://www.youtube.com/watch?v=uIKhCpwVy3E>

9. Companion Videos

Video 6.1 Deena Boraie and Nelly El Zayat: 'Developing a New Curriculum', Interview by Linda Herrera, *Education 2.0 Research and Documentation Project*, 17 June 2021, YouTube, <https://www.youtube.com/watch?v=86ZiLZuEi2k>

Video 6.2 Deena Boraie and Nelly El Zayat: 'Advisors to the Minister of Education', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 17 June 2021, YouTube, <https://www.youtube.com/watch?v=3nbxwZTgZW8>

Video 6.3 Deena Boraie and Nelly El Zayat: 'Communication about the EDU 2.0 Reform,' Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 17 June 2021, YouTube, <https://www.youtube.com/watch?v=zl9CVV3fte0>

7. Envisioning a New Curriculum for the Primary Stage: Interview with Nelly El Zayat

*Linda Herrera*¹

Abstract

Nelly El Zayat served as Advisor to the Minister of Education on Early Childhood Education and Educational Policy. She recounts how the advisory team initially started from a blank page to brainstorm what they considered the ideal attributes of graduates of Egypt's education system. The new curriculum for the primary years incorporated elements from the International Baccalaureate, UNICEF's Life Skills framework, and updated methodologies for teaching the Arabic language. Advisors worked with a range of partners from the private sector, international organizations, and the national curriculum center to develop the new books. Racing against time, and while juggling many commitments, they managed to launch the first set of new Education 2.0 books in the fall of 2018.

Keywords

curriculum development, curriculum framework, International Baccalaureate, life skills, private sector, textbook production, UNICEF

¹ This interview took place on 12 February 2020, in Cairo with a follow-up interview in 2022. Special thanks to the members of the Education 2.0 Research and Documentation team, Nairy AbdElShafy and Hany Zayed, who contributed to the first interview with background research and documentation.

1. Becoming Advisor to The Minister of Education

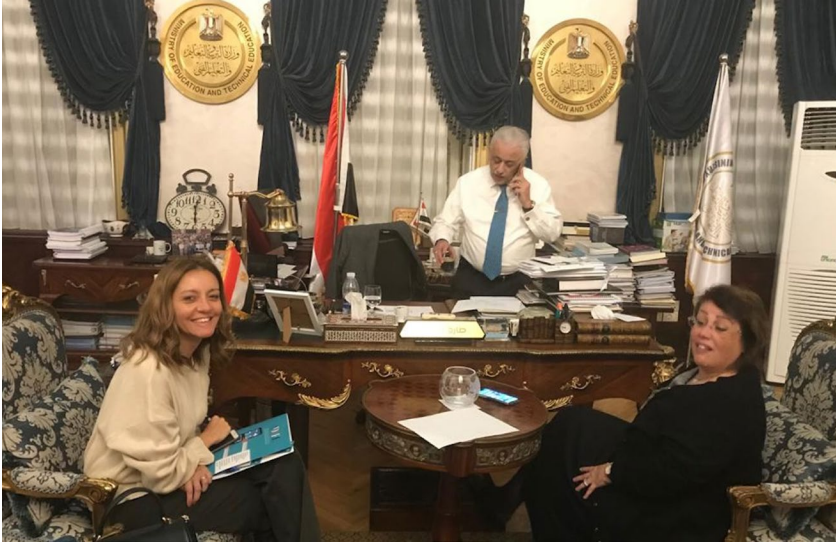


Fig. 7.1 A meeting in the office of the Minister of Education and Technical Education. Nelly El Zayat, Tarek Shawki, Deena Boraie, Cairo, 2018. Photo courtesy of Nelly El Zayat.

LH What was the process of becoming a member of the Minister of Education's advisory team?

NZ² Speaking for myself, I had met Dr. Shawki maybe two or three times when he was Chair of the Specialized Presidential Council for Education and Scientific Research, before he became Minister of Education. He was aware that I had been working in international education for more than twenty years. I worked on advising and scholarship management, and still do that. I went back to graduate school (Harvard University Graduate School of Education) and studied International Educational Policy. I also started my own company, Newton Education Services. He called to ask if I would be interested in joining his team, and we had a long conversation. I resisted a little bit at first (chuckles). I told him I would love to, but I did not think logistically it would work. I have my

2 Nelly El Zayat's LinkedIn profile provides more information about her professional and education trajectory: <https://www.linkedin.com/in/nelly-elzayat/>

own company, I live far away, and I have two young children. I am a very hands-on mom, very involved with my kids. So, everything was against me doing this job. I decided against it. He was very nice and said, 'I respect that you are involved with your kids, I want you to stay involved. I do not need you to come in every day. I need you to deliver. I need you to get done what we need done. It doesn't matter where you are physically'. I decided to come on board. The reality of that first year was that I ended up going downtown to the CCIMD (Center for Curriculum and Instructional Materials Development) office almost every day. We would also sometimes meet Dr. Tarek at his office in the ministry (see Fig. 7.1). But at least in principle, he did not really care about having a fixed working time from nine to five, but in getting the work done.

LH You have many years of experience working in the education field, but working on a national reform is a different kind of engagement. What is it like to work at this level?

NZ This offer to join the advisory team came at a good time because I was looking for a role that has to do with policy and a more strategic outlook on education. I was very... I want to use the right word... I felt very honored with the trust to do something like this. This is big. This is something that affects the whole country, it is not a small pilot. First, I learned that what we covered in classrooms at Harvard, or the research I did there, or whatever, has nothing to do with what is happening here on the ground. There is so much to learn here. This was the biggest, most important lesson. This idea of doing something for the whole of Egypt is meaningful. All of us as Egyptians, we walk down the street and think of the many things we want to change, or how things should be done differently. We talk about how the government needs to do this and that. To have the opportunity to actually do something was very, very special. I cherish that a lot. I feel I am fortunate to be here at this time.

2. Brainstorming for a New Education Framework

LH You joined Dr. Tarek's team of advisors at the start of the Education 2.0 reform. Can you talk about the beginning. What did you all want to accomplish?

NZ The metaphor that Dr. Tarek always used was: 'We are lucky. We can start with a blank sheet of paper. You can think and say anything'. And really, we were not restricted by anything. We could think anything we wanted. We could imagine the ideal system. Yes, we knew there were restrictions on the ground, but it was motivating for the team to be free to imagine whatever we wanted in the very beginning. We all started by brainstorming with Dr. Tarek to imagine what the best system for Egypt would look like. We threw in ideas that were based on research that each of us had done, personal experiences, a mixture of things. Next, we started to be more structured.

LH What ideas came out of the early brainstorming sessions?

NZ Everybody wanted to move away from rote learning, memorization, and the teacher centered system of class lectures. We agreed that we needed more interaction that would build the child's personality so she could contribute positively to society. We even brought up the concept of 'followership'. We talk a lot about what it means to be a leader, and this is important, but it's also important to consider what it means for people to choose the right leader and be creative with whatever set up they are in. We all had a rough idea of the sort of person we wanted to graduate from that system. We wanted this person to have leadership skills, be innovative, creative, be thinkers, be independent, that sort of thing. These were the ideas, the starting points where we first began. Then we started moving to actionable items by thinking roughly about a curriculum framework. Dr. Deena Boraie (Senior Advisor), Dr. Nawal Shalaby (Director of CCIMD), and I started on that.

LH How did you structure your ideas into a curriculum framework? What did that involve?

NZ First, Dr. Tarek hired Dr. Nawal Shalaby to be the Director of CCIMD, the Center for Curriculum and Instructional Material Development. We had to explain to Dr. Nawal that we wanted to really transform the curriculum and start from a blank page. This was all new and surprising to her at the time. But once she got on board, we basically moved all our meetings and operations to CCIMD. We started by meeting with Dr. Nawal on her own and then started meeting with her team of thirty-five staff members. We explained the concept of trying to

create a completely new system starting with a curriculum framework that would embody its philosophy and the ideas. (see Chapter 13 in this volume). They began researching different curriculum frameworks and education systems from across the world and pulled together their findings. We reviewed systems like the IB (International Baccalaureate), the British System, the American System, everything. We tried to see what would and would not make sense for us.

Something happened which I think was an important turning point. Nermine Noamany, who heads the International Partnerships at the Ministry, introduced us to Esmat Lameiy, who runs a private French I.B. international school called 'Oasis',³ as well as a public Ministry of Education school that follows the IB. Their students graduate with an IB degree. There are two schools like this in Egypt, and Ms. Lameiy runs one of them. She came in to meet us with Dr. Tarek to explain how they manage and run that school, how they work with the parents and set the fees. They pay something like 5,000 or 6,000 pounds EGP per year (roughly \$300 in 2018). This interesting model inspired us a lot.

We thought ok, here is an Egyptian public school that was able to move to the IB and parents accepted it, or eventually they were educated on it somehow. We met several times with the school director to learn what they did in the school, the curriculum they followed, that sort of thing. What we learned inspired this current Education 2.0 system and the curriculum frameworks that we eventually put together. We did not reinvent the wheel, but we also did not copy and paste the IB. We needed it to make sense for the Egyptian context.

LH Apart from the IB, did you borrow from other systems or ideas for the new Education 2.0 framework?

NZ Yes, we also met at the time with UNICEF who shared the Life Skills and Citizenship Education (LSCE) framework with us. These are twenty-first-century life skills, your usual suspects like critical thinking, problem solving, empathy, resilience, skills like that. There are twelve of them. Because of the Egyptian context, we added two more skills that

3 For more information on Esmat Lamei, see <https://blogs.worldbank.org/en/team/e/esmat-lamei>

we thought were important for Egypt: accountability and productivity (see Chapter 10 in this volume).

LH Why did you consider 'accountability' and 'productivity' especially important for the Egyptian context?

NZ The rationale was, you know, we suffer from accountability issues here in Egypt as a society. People tend to not be accountable. They say, 'This is someone else's fault', or 'This was not my responsibility', etc. So, we thought that if we bring in accountability from the early years, people will have more of that skill as they leave the system. And the same for productivity. This is the idea of being efficient and using your resources wisely, something that is much needed in Egypt, obviously. So, these were the reasons for adding those two skills to the framework.

LH How did you decide what content to include in the curriculum, knowing it was for all Egyptian schools?

NZ In the framework we have a pillar which we call '*Al Qadaya*' or 'the issues' that are relevant to Egypt. For example, there are environmental issues. Water is a big topic in the curriculum. There are issues that are related to non-discrimination, development, globalization. For instance, in Kindergarten and Grade 1, there are lessons in social studies like: 'I am Egyptian'. This is what the Egyptian flag looks like. But I am also part of Africa, and also part of the world. These have certain meanings and values. But obviously, the issues will become more complex as they grow older. We even have lessons in the curriculum that cover topics like female circumcision. We try to really discuss in various ways throughout the fourteen years, issues that are important for Egypt as a country and important for these students as Egyptian citizens. And we are trying to be more systematic about the curriculum.

From what I understand, curricular decisions in the past were more ad hoc. For instance, the Minister of Tourism would call the Minister of Education and ask him to include a lesson on, for example, King Tut, or whatever. It was not part of a scope or sequence of lessons in the curriculum framework or anything. So, they would add a lesson on King Tut in the reading and comprehension book (*kitab el qira'a*)

but it was not connected with anything else. The same could happen with the Minister of Environment who wanted a lesson on this and that. This is why we tried to sort out these issues in the framework, to incorporate all of these priorities in a planned way. We said we were not going to be adding random stuff to the curriculum, it had to make sense.

LH The framework is supposed to cover the entire arc from KG1 to Grade 12, is that right?

NZ Yes. The idea is those skills and those adjectives that describe the graduate of the system are supposed to be consistent throughout the duration of the education system from KG1 to Grade 12. So, yes, in some years or in some lessons, there is emphasis on certain skills. Obviously, you cannot cover every skill in every lesson, but eventually, yes, they are supposed to be covered across the years of education—ideally, in every year. This is still a work in progress. The curriculum framework has been put in place but specifying grade level curriculum components are happening as we go. Right now, we are done for the most part with the Grade 3 curriculum, which will be rolled out this coming September (2020). After that, we will work on Grades 4, 5, 6, and 7, so it is really evolving.

3. Working on the New Textbooks

LH Can you describe the process of working on new textbooks from scratch?

NZ We started with KG1, KG2, and Grade 1 and worked our way up. The reason we worked on three grades at once was because kindergarten is not compulsory in Egypt, and most families start sending their kids to school in Grade 1, the first year of primary. We wanted to make sure we included Grade 1 in that first wave of Education 2.0. The ideal situation would have been to start with KG1 but we had to do all three years. I worked very closely on all of the steps: the framework, the grade level framework, and the textbooks for each grade level. CCIMD led the process, and this was intentional. We wanted to make sure that CCIMD took the lead on the frameworks and books to always send the

message, 'This is a homegrown curriculum. This is made in Egypt'. It is not something we bought off the shelf from somewhere else. But we could not do this alone. We needed partners to help build the capacity inside CCIMD because when we started, the team there were not ready to do something like this. They needed support to come up with the frameworks and all the subjects.

LH Who were your partners?

NZ The earliest partner on board was UNICEF. They trained the team at CCIMD on Life Skills and how to integrate them into the curriculum. Then, we had two other partners (from the private sector) starting with Discovery Education, a US based company, and Nahdet Misr Publishing Group, an Egypt based company. They took a deep dive into the actual subjects being taught in each grade.

Discovery advised on the Arabic language subject, even though it is not their language. They were training CCIMD on how to create a curriculum for a language, whatever the language, and what you need to do to teach children literacy. They gave them extensive training and did the same for math. Discovery also worked on the multidisciplinary subjects, which include language, math, science, and social studies. The kids in KG1, KG2, in Grade 1 and now Grade 2, have an Arabic book and a multidisciplinary book. They also have an English book because they take English as a stand-alone subject. In Grade 1, they also have a religion book. So, we were dealing with all these textbooks.

One of the things Discovery did was to explain how necessary it was to have specific windows for literacy and numeracy in the curriculum and in the student's daily schedule (see Chapter 14 in this volume). Initially, we were enthusiastic about the idea of multidisciplinary learning without different subjects. We wanted to bring back the one teacher per classroom, like a homeroom teacher, and that is still the case. But when Discovery came on board, and I think this was an important addition, they said that no, we really need to carve out time specifically for literacy and numeracy because these are two very

essential skills that the children must have. With their support, we had to quickly go back to the drawing board to see how to build that into the curriculum and make sure there is enough literacy and numeracy focused lessons (see Fig. 7.2).



Fig. 7.2 Deena Boraie, Nelly El Zayat, and Nawal Shalaby with the first batch of Education 2.0 books, Cairo, 2019. Photo courtesy of Nelly El Zayat.

LH How did you choose Nahdet Misr to work with you on developing a new methodology for teaching Arabic? Was there a competition?

NZ Nahdet Misr is an Egyptian company that has been in education since the 1930s. They are the makers of the *Al-Adwaa* books, what we call the external books (*kutub kharijiyya*). This is the exact opposite of what we are trying to do. *Al-Adwaa* is not a ministry-provided textbook but a copy of the book that includes a large number of questions to prepare students for the tests. I think Nahdet Misr quickly understood that we wanted interesting, engaging, topics to teach kids Arabic. They came up with this amazing concept of teaching the letters of the alphabet out of sequence in a way that would help kids create words as soon as possible. They would still start with the first two letters 'Alef, Beh' (A and B), but then add a letter out of sequence 'Alef, Beh, Meem' (A, B, and

M), and then introduce the words 'Ab and Om' (Father and Mother) quickly. I think the next letter was 'feh' (F) so they have 'Fam' (mouth). By introducing new letters out of sequence instead of learning all the letters in order at once, kids could quickly create words and sentences. Dahlia Fouad, the director of their academic department, and Dalia Ibrahim, the company's CEO, were both heavily involved in this. I think the actual Arabic work was done by Dahlia Fouad (in collaboration with Edupedia) (see Chapter 15 and Chapter 16 in this volume). I think it was a really good move to bring in Nahdet Misr as an Egyptian partner because this is an Egyptian curriculum.

But then what happened was that other book publishers like *Selah El Telmeez* and *El-Moasser*, that also produce external books used for test preparation, were asking: 'What about us? What are we going to do?' They were worried that they would not have a chance to do any books since the 2.0 system covers all the years to Grade 12. They asked to meet with the minister, and he explained that this was not a monopoly, contracts were yearly, and if someone had better things to offer, the ministry would come to an agreement with them. The Minister explained that they could still do the external study-guide books for the later years. But as the new system was getting rid of traditional tests through Grade 3, these companies had to rethink their business model of providing external books oriented towards tests. The first major test would be in Grade 4. He suggested that they could maybe do games that support the activities in the classroom for the multidisciplinary books. He met with them several times because they felt threatened.

4. Managing Time Pressure

LH Dr. Tarek became minister in 2017, and the new books for KG1, KG2, and Grade 1 were rolled out in September 2018. Can you walk us through the timeframe?

NZ We started to work on the curriculum mid-to-end of August 2017, and then all through that year. The new system was supposed to be in schools September 2018, so we only had a year to do the curriculum framework, the three grade level frameworks for KG1, KG2, and Grade 1, and the textbooks. In fact, we had less than a year, because books had to be finished by May or June and sent to the printers. We also had to train

teachers over the summer so that they would be ready for September. We basically had eight or nine months to finish everything.

We were all working around the clock. I remember Dr. Nawal, Dr. Deena, and I were working during Ramadan. We would be on a conference call, all of us with our computers. The call to prayer would come and I would go quickly to get something to eat or drink because we would be fasting. We might still be on the call at 1:00 a.m. or 2:00 a.m. We were literally working around the clock. Some of the CCIMD team, specifically men, used to spend the night at the Center. And, the women would come early, very early. They would go home only for a few hours and come back. It was really, literally, working around the clock. Everybody was highly involved and knew that we really did not have time.

Initially, the partners were skeptical and felt we could not get this done. But there was no other option. Discovery Education and Nahdet Mizr also worked around the clock. We would be on calls with members of the team in Discovery in the US at crazy times. It would be after midnight for them, early morning in Egypt. I think this also initially shocked the partners. But there was no time to be shocked. We said, 'Yalla, we have to move'.

LH Why did you have to implement the new curriculum and books so fast? Could you not have waited for the following year?

NZ The President asked to have a new system in place as soon as possible. The Minister was appointed in 2017 and bargained for a one-year extension and promised him to have the beginnings of a new system in place September 2018. So, this is how we got this timeline.

LH Was the curriculum framework being developed at the same time the teacher training was being designed?

NZ Sort of... Discovery also did the Teacher's Guides and mapped the lessons from the textbooks. The Teacher's Guides were a big and necessary part to start the teacher training. We were trying to have them both ready at the same time. We had to train all the teachers (of KG and Grade 1) in all of the governorates, a total of 128,000 teachers.

LH How did you manage the different types of partners? Discovery is a private company, UNICEF is a UN organization, CCIMD is a government

organization, Nahdet Masr an Egyptian publishing company. Who was managing all of these parts?

NZ Maybe the only plus of having a tight timeline was that there was no time for drama or politics or issues with management, because we were all running. I would give the most credit here to Dr. Nawal Shalaby because she had to orchestrate the process and manage the different experts. There are experts in different subjects, in curriculum design, et cetera. It took some time to convince the CCIMD team about the new system. I think that was more challenging than managing the partners, to have the team at CCIMD be open to people telling them basically, 'No, forget about what you have been doing for your career, this is how we want to do it now'. I think Dr. Nawal handled that really, really well. And then Dr. Deena and I were involved. We were liaising between the partners and CCIMD. But I think that if it was not for Dr. Nawal's open mindedness and the big picture view, none of this would have worked.

5. Multitasking

LH You have two young children, your own company, and responsibilities as an advisor. How do you manage your time? What does the day in the life of Nelly El Zayat look like?

NZ In the beginning it was crazy, and this work was taking priority over my other work. It was competing with my family (laughs). Like I said, we were all working literally round the clock. But on the very personal level I felt like I was finally able to contribute and do something meaningful for the education system in Egypt. I really believed in what we were doing. There are moments in this job, at the Ministry, where you do certain things because you have to, or because that is the way it is, or whatever, like any job. But this part of working on the new curriculum framework and books, I really enjoyed, though it was exhausting. I felt that I was doing something meaningful. This was a priority for me at the time. Now, CCIMD is running with it. The team there came a very long way. They learned a lot and we (the advisors to the Minister) are not as involved as we were in the beginning.

At the time, we were reading every word that was written in every book, we were looking at every picture, we were sending comments

about everything. For example, the names of the children in the stories, the character names in the book. We would point out if a name is not very Egyptian, or if names are only Muslim. We were going into specific details. I have friends whose children are in Grade 1 or Grade 2 who are taking these new books. They tell me how amazing the books are. How they are a big shift from their older kids' books. And I see it even with my own children. My eldest has the old Arabic books and my little one will get the new books. So, I see that there is a huge difference, really, not because I worked on them, but because they really are very different.

LH At this juncture, two years into the reforms, how do you see change? Do you think there is a difference on the ground?

NZ I think that because the change is happening with the younger children, the feedback from those families has been, as far as I can tell, generally positive. But it has not taken the public space that it deserves... yet. This is partly because the early grades are not considered high stakes like the stuff that happens in high school. People are more focused on that because it affects their future immediately, whereas what is happening with the younger kids, we get just very scattered individual feedback. The Ministry has not done enough to tell people what is happening in the classrooms of the early grades. This will hopefully, eventually come, but right now, there needs to be more light on it.

6. Education 2.0 Resources

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Ministry of Education and Technical Education. 2018-2024. 'KG1 and KG2 Books and Teacher's Guides', *Edu 2.0*, <https://edu2-egypt.com/kg1-2>

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Ministry of Education and Technical Education. 2019-2023. 'Grade 2 Books and Teacher's Guides', *Edu 2.0*, <https://edu2-egypt.com/grade-2>

Ministry of Education and Technical Education. 2020-2024. 'Grade 3 Books and Teacher's Guides', *Edu 2.0*, <https://edu2-egypt.com/grade-3>

7. Companion Videos

Video 7.1 Deena Boraie and Nelly El Zayat: 'Advisors to the Minister of Education', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 17 June 2021, YouTube, <https://www.youtube.com/watch?v=3nbxwZTgZW8>

Video 7.2 Deena Boraie and Nelly El Zayat: 'Developing a New Curriculum', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 17 June 2021, YouTube, <https://www.youtube.com/watch?v=86ZiLZuEi2k>

Video 7.3 Deena Boraie and Nelly El Zayat: 'Communication about the EDU 2.0 Reform', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 17 June 2021, YouTube, <https://www.youtube.com/watch?v=zl9CVV3fte0>

8. Advocating for Children with Special Needs: Interview with Ingy Mashhour

*Linda Herrera*¹

Abstract

The Minister of Education's Advisor for Special Needs Education Ingy Mashhour (2017-2022) discusses three key milestones of the Education 2.0 reform: the development of a new curriculum framework for children with intellectual disabilities; teacher guides for students with sensory impairments; and the launch of the Tenth of Ramadan Center for the Rehabilitation of People with Special Needs in 2019. These initiatives were developed as the Egyptian state integrated inclusive education and the needs of children with disabilities into state policies and laws. Changes on the ground, however, have been harder to achieve, and parents seem to not have confidence that the education system can adequately attend to the special needs of their children.

Keywords

ADHD, autism, curriculum framework, inclusive education, people with disabilities, special needs

1 The interview took place on 11 May 2020 via Zoom with a follow-up correspondence in June 2022. Special thanks to the members of the Education 2.0 Research and Documentation team Nelly El Zayat, Nairy AbdelShafy, and Hany Zayed who contributed to the original interview with background research and questions.

1. On Becoming Advisor for Special Needs Education

LH The Education 2.0 reform stressed the need for inclusive schools and accommodating children with special needs.² You served as a key ministry consultant for integrating children with special needs in Egyptian schools starting in 2017. How did you become involved in these reform efforts?³

IM⁴ Dr. Tarek (Shawki) and I met when I was the Public Relation Manager at the Egyptian Autistic Society. He was forming a team of advisors and asked me to be his consultant for students with special needs. Even though I graduated from the Faculty of Commerce and used to work in the finance field, I have diplomas in education and child

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- 2 UNICEF has been an active partner with the MOETE in helping it develop policies for marginalized children and children with special needs. In a report on Education 2.0, UNICEF emphasized its contribution 'to ensure that skills-based learning is available to marginalized children, including those with disabilities and those who are out of school. UNICEF has helped MoETE to develop guidelines for the adaptation of learning materials for children with hearing and visual impairments as well as those with mild or moderate cognitive disabilities and has developed a Teachers' Guidebook on Inclusive Education' (2021).
 - 3 See the initial strategic document of the MOETE 'Education 2.0: Vision and Strategy. Egypt's Transformation Program (2018-2030) on 'Inclusion for children with special educational needs' which reads, 'This component will be cross-cutting and will apply to children of all age groups with special educational needs. Equity in access to a good education for children with disabilities—including those with learning disabilities, visual and hearing impairments and other physical disabilities—is a presidential priority. It is enshrined both in the Egyptian constitution and the most recent disability rights law, issued by the President. We will also implement specific policies and programmes for children with special educational needs (SEN). The MOETE has already taken steps to make a reality of this vision: we have issued regulations to enable inclusion in mainstream schools and to improve quality in specialist special needs schools. Building on these measures, we will now undertake further reforms on the existing system—Education 1.0 reforms—and develop new models, which will form the basis of Education 2.0 for SEN pupils. For the Education 1.0 reforms, our priorities include: (i) public campaigns to challenge negative stereotypes; (ii) celebrating the talents of children with disabilities; (iii) training for teachers and other school professionals; and (iv) implementing special workshops in technical education. Our priority for Education 2.0 for SEN pupils is to develop a radical new integrated approach to the education of SEN pupils' (2018: 29).
 - 4 Ingy Mashhour served as Advisor to the Minister of Education for Children with Special Needs, and Associate Minister of Education (2020-2021). For more information, see her LinkedIn profile, <https://www.linkedin.com/in/ingymashhour201140saalem/?originalSubdomain=eg>.

psychology. I initially did this as the mother of a child with autism. I started doing some consultancy for parents of children with special needs and led training courses for shadow teachers and specialists working with students with learning difficulties and autism. Starting in 2005, I organized awareness campaigns and did a lot of media and advocacy on behalf of people with autism in Egypt.

LH How were children with autism and special needs perceived in Egyptian society at that time?

IM The words ‘autism’ and ‘special needs’ were not really recognized at the time. I can say there was a big change in society between 2005 when I started the work, and 2017 when I joined the Ministry in terms of the way society sees and deals with children with autism. But regarding regulation and a model of good inclusion to accommodate these children in schools, there were attempts, but no real change. I had a vision for children with special needs.

Dr. Tarek told me about how the Education 2.0 reform would focus on special needs. He said, ‘Come and take this over and let’s do it together’. After that, I was in a group assigned by the President to study best practices and develop a model for detection, intervention, accommodation, teaching, and training of children with mental special needs. Egypt Vision also includes sections on special needs (Ministry of Planning 2016).⁵ Our role was to come up with a good model for

5 Article 53 ‘Equality in Public Rights and Duties’ of the Egyptian Constitution of 2014 states, ‘Citizens are equal before the law, possess equal rights and public duties, and may not be discriminated against on the basis of religion, belief, sex, origin, race, color, language, disability, social class, political or geographical affiliation, or for any other reason. Discrimination and incitement to hate are crimes punishable by law. The state shall take all necessary measures to eliminate all forms of discrimination, and the law shall regulate the establishment of an independent commission for this purpose’. Article 81 which deals with Rights of the Disabled states, ‘The state shall guarantee the health, economic, social, cultural, entertainment, sporting and education rights of dwarves and people with disabilities. The state shall provide work opportunities for such individuals, and allocate a percentage of these opportunities to them, in addition to equipping public utilities and their surrounding environment. The state guarantees their right to exercise political rights, and their integration with other citizens in order to achieve the principles of equality, justice and equal opportunities’ (Arab Republic of Egypt 2014).

including them in society and providing the best services to build their abilities. This was before there were regulations or laws for inclusion in schools, those started appearing in 2017, first at the Ministry of Education and Technical Education with Ministerial Decree No. 252 (about the admission of students with mild disabilities in public schools) and then with the important Law No. 10/2018 on the Rights of Persons with Disabilities.

LH How did the new ministerial decree and law on the Rights of Persons with Disabilities affect your work?

IM There was a big opening. The President declared 2018 the Year of Special Needs. Every year the President chooses a certain cause, like youth or women. That year was for special needs education. This meant our work in this area would be supported by the President himself. When the parliament passed the new Law No. 10 for special needs, that was a really big deal because it led to more public awareness. There were public campaign commercials and a lot of conferences.⁶

LH What percentage of children fall in the category of 'special needs'?

IM The percentage of special needs in Egypt is somewhere between 10% to 12%. This means ten to twelve million people are in this group. This is a big part of our population. So, yes, everyone knows about special needs, but these people have been excluded from many activities and other things and lack proper accommodations or rights in education. And not only in education but in many other aspects of life (Fig. 8.1).

6 Chapter 3, Article 10 of Law 10 of 2018 reads, 'Subject to the provisions of Articles (53) and (76-bis) of the Child Law promulgated by law no. 12 of 1996, the Ministries of Education and Technical Education, and Higher Education and Scientific Research and Al-Azhar Education Institutions - as well as concerned ministries and bodies - shall take the necessary measures to ensure that persons with disabilities and their children without disabilities receive inclusive education in schools, classes, universities, institutes, governmental and nongovernmental institutions available to other persons, which are close to their places of residence in light of the degree and type of disability provided that they meet the standards of quality, safety, and protection'.



Fig. 8.1 Tarek Shawki and Ingy Mashhour (third from right) visit a school for deaf in Sohag Governorate, 2019, Wikimedia Commons, CC BY 3.0, <https://tinyurl.com/mmmex39f>

2. Defining ‘Special Needs’ and ‘Inclusion’

LH The Ministry had to come up with new policies and guidelines for inclusive education. How did you define this category of ‘inclusive education’?

IM When we started to draft the new regulations, one of the main objectives was to provide a classification of special needs and define exactly what this word means. We tried to widen the meaning because it used to be understood as ‘disabilities’, the typical disabilities like those with hearing, physical, and mental impairments. It did not include people who need support. Those with learning difficulties or slow learners are also people with special needs. They need special treatment, special support. So, we tried to widen the range a little bit. Inclusive education refers to students who can be included in the normal schools. Inclusion is for those students who are educable, who take the same curriculum and are in the same schools as their peers, their ‘normal’ peers. They join

the same classes and take part in the same activities. We also have special schools for the hearing, mentally, and the visually impaired.

From the side of the Ministry of Education, we have two separate kinds of students in schools: the ones who can be included and get an education in the regular schools with their peers with some help and support; and others who are not able to follow the normal curriculum and need to go to special schools. We had to come up with a benchmark of who should go where and how to accommodate these students. For example, we had to decide on things like, during exams, do our special needs students need extra time or help? We had to come up with all the regulations needed. This was where I started. I worked on how to regulate education for inclusion. We started by changing the classifications of disabilities and setting proper accommodations or facilities.

LH What terminology do you use in Arabic?

IM In Arabic, I prefer to use the translation of special education or special needs which is 'ذوي احتياجات خاصة' (*dhouwy ihtiyajat khasa*). I do not like to use the word 'disability' 'إعاقة' (*iaqaa*). Here in Egypt the term 'إعاقة' is very heavy on people. It is a word associated with bullying. So special education 'ذوي احتياجات خاصة' is much more acceptable in Egypt and I think all Arab countries.

LH What practices or attitudes prevalent in the Egyptian context did you need to take into consideration when working on inclusive education policies?

IM We had many meetings with different NGOs, the Ministry of Social Solidarity, the Ministry of Health, and a lot of people working in this field. There is this massive reference book called DSM 5 (*The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*). It is very clear what 'special needs' means there, but here in Egypt we need to fit it to our society and our schools. For example, we had some disagreements about how low the child's IQ could be for him/her to be educable and included with their peers. We also had to think about class density. We often have sixty or seventy students per class, and the numbers can reach up to one hundred, so how do we factor for this? But in general, we did not have big differences.

There is also the example of the visually impaired, those who have slight sight, but cannot be treated as people who see. Here in Egypt, parents prefer to send them to special Ministry of Education residency schools for

the visually impaired, rather than normal schools, even though in these special schools they take the exact same curriculum. Parents prefer to give these schools the responsibility to deal with their kids who only go home on the weekends. This is a 'social problem' more than a 'disability' problem because the parents are afraid that if their kids go to 'normal' schools, they might get hurt or be bullied. Some people were against those special schools, but socially, we could not dismiss them.

3. Training and Awareness

LH Inclusive education is a relatively new concept for Egyptian educators. Have teachers and other school workers received special trainings or Professional Development on this?

IM Yes, we started by leading a workshop between professionals from the United Kingdom, Egyptian specialists, and our curriculum center CCIMD (Center for Curriculum and Instructional Materials Development). We took the new Law No. 10, and the President's mandate into consideration. We came up with two guides—one for curriculum experts and the other for teachers on how to accommodate the different abilities. Our next step was supposed to be to print, distribute, and lead the teachers. However, we faced a lot of obstacles, and this phase did not come to light, although the full document and workshop records are at CCIMD.

We were however able to complete big trainings in all twenty-seven governorates where we provided information about the new regulations and how to deal with students with special needs. We started to put a model of inclusion in place for schools. For example, if a student with special needs is admitted to a school, a committee is formed to make an assessment and write up an Individualized Education Program (IEP) to meet the child's learning needs. This includes information on how the class teacher can work with the specialist in the resource room. The resource room provides a one-to-one education for those who need help. Prior to this, learning difficulties like ADHD (Attention Deficit Hyperactivity Disorder), dyslexia, slow learners, visual and hearing impaired and so on, were not really considered in any school regulations. We started to train teachers on how to identify different kinds of learning difficulties. We carried out more than 50,000 trainings in two years for class teachers and specialists. Trainings covered the big picture of how to deal with kids with learning difficulties, and information on specific disabilities.

LH That is an enormous amount of training in a short period of time. How did you manage to cover all the twenty-seven governorates and hold 50,000 sessions?

IM Actually, the teacher trainings were mainly in seven governorates, and the rest were more like video conferences. We sent committees to make sure they were aligned with what is happening and tell them about the new regulation and how to implement it in schools. The real capacity building and teacher training happened in seven governorates. UNICEF and Ain Shams University mainly oversaw that with the Ministry of Communication. School staff learned how to set up the system and resource room, where the kids have to do their IEP, and the person assigned to follow the IEP with the class teacher, the whole model. We have been upgrading the training. Now we have a good curriculum for teachers who are working with our kids on special education within the multidisciplinary system of Education 2.0.

LH Given endemic problems of schools being over-crowded, understaffed, and under-resourced, do teachers have the capacity to cope with these new measures for special needs children.

IM We always ask teachers what difficulties they face in the classroom. Usually, we find out that they have slow learners or students with learning difficulty, and they do not even realize it. We try to tell them the proper ways to deal with problems around concentration, hyperactivity, and so on. We also give them tools to develop activities themselves. By the end of the training, based on the feedback paper they fill out before and after, we have found that they acquired a lot of information that leads to big behavior change.

4. Developing the Special Needs Curriculum Framework

LH The Ministry of Education and Technical Education had to come up with a special needs curriculum framework to align with Education 2.0. Who worked on developing that framework?

IM When Education 2.0 was implemented it needed some accommodations for special needs, specifically the visually and hearing impaired. Our work started with making a Teacher's Guide that aligns with

the pillars of Education 2.0 and lays out the proper accommodations for each group. This year we made a separate Teacher's Guide about special needs because we finished late. In future years we will have one unified guide because even if a teacher does not have special needs students in the class, she will still have to know how to embrace differences and encourage other students to accept diversity. This is part of the new 2.0 philosophy.

We had a team for this work that included three international experts from Lebanon, Hungary, and England. We also worked with Dr. Nawal Shalaby from CCIMD and their special education needs department, and four professors from Zagazig University (Faculty of Disabilities Sciences and Rehabilitation). In the beginning it was not very easy to get everyone on the same track (laughs). Each group had their own set of terminology and thinking about how to implement and put this framework together. This was one of the biggest challenges. My main role was to just follow-up and review what they came up with. In the end, I offered a few remarks or asked for further details, but they did all the work.

LH How did you manage the relationship between a group that included academics from Zagazig University, international consultants, and CCIMD staff? Are there certain approaches or lessons you can share with us?

IM Actually, we had four workshops and each one lasted two weeks. It is all about, you know, it takes a lot of breaking the ice. Here in Egypt, we do not like when people from abroad come and tell us what to do. So, we started by doing some activities together. They started to know each other better in those activities. Then we tried to discuss all the terminology from each group and settle on a common understanding. After each joint workshop I asked them for their feedback. If I had good remarks I shared it, and if I had negative inputs, I discussed it with them. I think after the third workshop they were able to all work together with no hard feelings. This was especially important for Dr. Nawal's team. In the beginning, they did not see why they should work on special education. They did not regard it as useful or important for everyone. We had to make them understand how fruitful it would be, how these children are capable and have lots of abilities and make up a very large number of children. I think they totally changed their way of thinking about special needs. So, this was a big change, since it changed the mindset.

Zagazig University had very outdated methodologies, ways of thinking, and lacked practical experience. Working with special needs

requires knowledge of the practical side which is more important than the theoretical side. We showed some videos about what is happening in the schools, the challenges that teachers face, and some examples of students who got through the system and went on to university. They saw how some of the children became very successful and others learned to overcome the challenge of their disability. This helped them to work with us, or to not resist working with us, which was enough, for me at least. By the end of the fourth workshop, I think they gained a lot of experience and new information. They told us they would go back to their university and change a lot in the curriculum.

LH How many people participated in the workshops?

IM Around forty. We were always putting them in four groups of tens. We did not have straight lectures but interactive activities. They worked in groups and exchanged what they understood together and then went back to the instructor to ask questions.

LH That sounds like a very Education 2.0 approach.

IM Yes, exactly (laughs).

LH In 2019, the Riyadh Center for people with special needs opened in the Tenth of Ramadan. Can you talk about that?

IM We designed and built Riyadh Center (The Tenth of Ramadan Center for the Rehabilitation of People with Special Needs).⁷ The purpose of the center is to serve kids from ages three to age twenty-one in all aspects of life, not only formal education. The Center covers things like physical problems and has areas for sports and recreational camps so the kids can get more social interaction. A small part is for vocational training. We want to put some protocols in place with the factories so that they can get training and have career opportunities. The main goal is to support their education and wellbeing. This is a very brief description of this center.

⁷ The (Riyada) Tenth of Ramadan Center for the Rehabilitation of People with Special Needs was established in 2019. At a size of 24,000 square meters with green areas making up 70% the area, it is one of the largest centers for people with special needs in the Arab and African countries. It provides trainings for teachers and receives up to 500 cases per day from schools free of charge (MOETE 2022).

LH Education 2.0 has involved a lot of technology integration with the Egyptian Knowledge Bank (EKB) and different digital platforms. Do these serve children with special needs?

IM We are trying to encourage special needs students to use the Study EKB portal which is very useful for them, and they can access it easily. Since the pandemic, we have also been encouraging special education teachers to form WhatsApp groups to keep direct communication with their students. We also accommodated the end of year project assessment to fit each disability. For the high-school students with special needs, we do not have them do electronic exams in Grades 10 and 11, they are doing projects instead. And now we are focusing on the Thanaweya Amma exams. It is really challenging. After two pandemic years, the level and knowledge acquisition of all students has been affected, but the most affected ones have been the students with special needs.

5. Is There a Transformation?

LH From when you started this work in 2017, to now in 2022, have you seen the kind of transformation in special needs education that you were hoping for?

IM Unfortunately, till now with all the laws and regulations, the actual situation is still frustrating and not even close to how it should be. The number of students who need special aid is augmenting. We have anywhere from 15% to 20% of students who have ADHD or dyslexia. These numbers are actually very large, and they are the main reason why students leave school early. I presented the minister with a full study on how we should create different paths to suit each student within the system, whether through academic, scientific, athletic, artistic, or vocational capabilities, but I did not see any change. Simply put, early detection and early intervention are not imbedded in the process, and we do not have a proper system to consider solutions and different paths. If we do not implement equal opportunity practices according to each person's capabilities, we will not be able to give each student their fair chance. The students' levels are deteriorating, and parents do not have confidence in the system. Teachers use new terminology, but with no actual change or impact. After many years in a process to bring about transformation, I cannot say that the situation has actually changed.

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9. Media Messaging about Education Reform:

Interview with Yousra Allam

*Linda Herrera*¹

Abstract

Yousra Allam served as the Marketing and Communication Advisor to H.E. the Minister of Education and Technical Education Dr. Tarek Shawki from 2017 to 2022. The communication to the public was complicated since the reform contained several components including a new curriculum, tablets for all students entering high school (Grade 10), the integration of digital resources, and changing modes of assessments. The team worked with private marketing, advertising, and media agencies to ensure their message would reach most of the geographical areas in the country. Through television, newspapers, online news, and social media platforms, they tailored their message to different social groups and generations.

Keywords

advertising, communication, Covid-19, Facebook, Instagram, marketing, social media, tablets, WhatsApp

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- 1 This interview took place on 11 March 2020 at the Ministry of Education and Technical Education in Cairo. Many thanks to the members of the Education 2.0 Research and Documentation team who supported this interview. Hany Zayed and Nairy AbdElShafy helped with background research, questions, and transcribing the interview, and Mostafa Hanafi and Ahmed Alaa Abulwafa made the audio and video recording.

1. Joining the Minister's Team



Fig. 9.1 The advisors to Dr. Tarek Shawki, Minister of Education and Technical Education, Cairo, 2018. Yousra Allam is in the first row, second from left. Photo courtesy of Nelly El Zayat.

LH Can you briefly describe your position?

YA² I am the advisor to the Minister for Marketing and Communication. In brief, I am trying to translate the Ministry's vision and strategy to the public with very simple messaging.

LH How did you come to know the Minister Tarek Shawki, and what made you want to join his advisory team?

YA I met Dr. Tarek Shawki when I was enrolled in the Presidential Leadership Program (PLP). He is the one who interviewed me. When he became the Minister of Education and Technical Education, he asked if I could help in this role. Actually, I was eight months pregnant (laughs) when he asked me to join his team. He explained the vision for the new education system, and I got really excited. When I was in school, fifteen or twenty years ago, I used to memorize

2 Dr. Yousra Allam served as Advisor to the Minister of Education and Technical Education for Marketing and Political Communication from 2017-2022. For more information, see her profile on LinkedIn: <https://eg.linkedin.com/in/yousra-allam-256a2374>

everything. They were literally spoon-feeding us. After the exams we forgot everything. I did not learn well until I joined the university. It was there that I started to explore many new things like life skills, critical thinking, creative thinking, and so on. I wondered why I had not learned those things when I was younger? It might have changed a lot in my character. So, when Dr. Tarek explained the vision and framework of the new education system, that it consisted of personal skills, creative thinking, negotiation skills, empathy, cooperation, I knew this would help the students, especially when they started their working life.

I joined the team two weeks after giving birth. Dr. Tarek was surprised that I joined so quickly. But really, I did it because I had a very huge passion for this reform and for his belief in changing the education system. I did not want to miss any part of it. I was so excited to come back to work, to see the impact of the reform and how he would manage this huge shift (see Fig. 9.1).

LH Since you joined the team just two weeks after having your first child, how have you been managing your work, life, motherhood balance?

YA It has not been easy at all. At first, I would come to work for four or five hours per day. Gradually, I started to increase my hours. Luckily, I did not feel any of the post-partum depression that comes to some women. Maybe I can advise all mothers to go back to work as quickly as they can. I wanted to feel that I am doing something for the society, and that has been very rewarding for me. Doing things other than the mommy life gives you an empowering feeling that would help you to move on. I want my daughter to see that yes, her mom worked for something, for the children of Egypt.

2. Background in Advertising and Marketing

LH Prior to joining the Minister's team, you had been working in the private sector in marketing and advertising. Did that work prepare you for a position in the government sector?

YA I used to work in multinationals. I was so worried about joining the governmental sector and wondered if it was a good career move. I was not

sure it would fit my previous experience, but I have definitely gained a lot of experience and it has provided opportunities for a lot of networking.

LH What kind of marketing and advertising work had you been doing?

YA I was at the Leo Burnett advertising company for about five years. I worked on Nestlé Food and Nestlé Waters. Do you remember we used to have the Baraka water in Egypt? It was a very square bottle with pyramids in red and yellow. It was not a very friendly or cool bottle, and it appealed more to an older generation. We wanted to do a brand revamp and target the younger generation. We conducted a lot of focus groups to ask them why they were not buying Baraka but other brands. Actually, Nestlé Waters owns Nestlé Pure Life and Baraka water. Many people we talked with said, ‘When I drink Baraka, I don’t feel hydrated, I still feel that I want to drink more water’. The salt taste, the TDS (total dissolved solids) was very high. That is why we changed the salt percentage and revamped the bottle. I also worked on some L’Oréal products, mainly Garnier hair color and some skin products targeting the B and C class.³ I also worked on some kinds of medicines with Novartis. I did the launches for new Maggi spices for kofta and other things. I also worked on Cerelac baby food. After that, I headed campaigns in the marketing department. I stayed there for five years until I joined Dr. Tarek’s team three years ago. And now, in addition to my work with Dr. Tarek, I am teaching Marketing and Entrepreneurship part-time at the New Giza University.

LH Has your experience in marketing and advertising helped you with your work as communication advisor to the Minister of Education?

YA Yes, because during my corporate life I communicated with target clients from different socioeconomic classes. I used to make field visits to people living in very underdeveloped areas. I got to know their mindset, how they think, their perspectives on things and so on. When I joined the team here, I knew how to communicate a specific message to very targeted segments of the society. I try to make sure that our language is as simple as possible to reach different groups so that they understand the major shifts in the new education system.

3 See below for a definition of these classes.

LH You recently completed your Ph.D. in Communication and Media Studies from Cairo University. Has your doctoral research given you tools to improve the communication strategy at the Ministry of Education?

YA My topic was on media reform and how to produce a benchmark that the Egyptian Media System could follow. Egypt has been in a transitional phase for a long period, and a benchmark would help it move out of this phase. I looked at case studies from many countries like Poland, Hungary, Russia, and Germany to see how they shifted from an authoritarian type of media system to a more liberal media model. I wanted to see the best practices we could have in Egypt. We obviously cannot copy and paste a media model, and that is exactly the case in education. We cannot take a curriculum from Singapore or somewhere and apply it here in Egypt, it will not work. Each country has its own behavior, culture, and audience. So, we must shape a media reform to match the Egyptian culture. That is what I worked on in my Ph.D.

I definitely found ways to apply my research to education. I am interested in countries that have media literacy for school children. I found out, for instance, that in Germany they start educating children about media literacy from the time they are in nursery school. Can you imagine? They tell them: 'This kind of information you can believe, and this one you cannot'. From first grade they teach them about sources and making sure they are credible sources. Teachers have media training every six months in Germany because the media environment is so dynamic. I have a long chapter about media literacy in Egypt and how we can adapt it here. And luckily, in the new education curriculum, we have a subject for media literacy. So, it is very interesting.

3. Communication Strategy for Different Generations

LH What is your overall communication strategy? How do you cater to different groups and audiences in Egypt?

YA We depend on all different types of media channels, because in Egypt the audiences are so fragmented. If you are talking about the generation of sixty years and above, they still read newspapers and watch television. If you are talking about generations twenty years and under, they are always on social media. We use the Ministry of

Education Facebook and Instagram accounts. The ones in the middle go to online news. So, we are usually trying to tackle or to talk across all media channels to reach the whole population because the education system is not only impacting a certain age or a certain social class, it affects all the generations.

We thought it would be best for the Minister to directly explain the theory behind his vision about changing the new education system. When we depend on a journalist, sometimes they miss a keyword that might make a huge shift in the meaning. The Minister himself is the only spokesperson to explain the idea of the new education system. He has been on many different channels and shows, every single channel that you can imagine, targeting A class, B class, and C class audiences. Initially, he went on radio and television talk shows once or twice per week to explain the new education reform in a very detailed and deep way. He also gets his message across through his own Facebook page and the Ministry of Education Facebook page.

LH What do you mean by A, B and C class audiences?

YA In Egypt you have a very fragmented media. The media is classified into certain channels targeting different social income groups. We wanted to make sure that his message and his vision gets disseminated across all people in the society. That is why we arranged a media schedule for him to talk in every channel and to elaborate the new education system in detail. For every segment of the population, he has his own language, or he speaks their own language. In the A class media, they want to understand why we are changing the education system and how that would be helpful for their children. Other channels targeting B or C class, they want to know why it is more useful for their children to go to school instead of working or staying at home. So, each socioeconomic category has its own mindset and interests. We wanted to speak their language and convince them that the new education system is for the sake of their children. Our goal has been to reach every home, every family, every parent, to let them understand our vision and for them to be our ambassadors. Here in Egypt, we have the word-of-mouth concept, and the snowball effect is very common. We wanted to convince the parents themselves that we are doing something for the sake of their children, and we are changing the new education system for them.

LH This education reform is novel for Egypt and has many components. You have a new curriculum and books for the early years of primary school, changes to the questions for the Thanaweya Amma exam, and new digital tools and platforms. The public often seems confused about what is happening. What kind of strategy has the Minister's office put together to explain these different changes?

YA We have faced a lot of criticism from all over the population. In the beginning they were saying it is impossible to change the education system, that it will not work. Actually, when Dr. Tarek spoke to some of the television anchors and explained the new system, they did not believe it would happen in Egypt. They doubted that the curriculum would be completely changed. Or they would say that we are just getting an American curriculum and replanting it here. But that is not the case at all. That is why we depend on the Minister himself to be the messenger. We also call on Dr. Nawal Shalaby, the Head of the Curriculum Center in the Ministry of Education (CCIMD). She explains how we are using a new terminology like 'weave the curriculum' (*bindafar al-manahij*). She says that 'we weave the curricula to suit the Egyptian student'. She has also been explaining how we adapt concepts and frameworks of international entities to suit our Egyptian context. We also make short documentaries about how the CCIMD is working on the new curriculum and we play these on the talk shows. So, in the first year we started to gain the people's trust. They started to believe that yes, we are really changing the books and are going to start with the new system on time (in September 2018).

We also participate in many conferences. Dr. Tarek gave a speech at the Presidential Conference about the new education reform and showed the new 2.0 books. People have started to feel yes, we are achieving our promise. And the President himself supports the new education reform, and this gives us a lot of backing and credibility.

LH Do you use professional marketing companies to help with the messaging?

YA Definitely yes. A research agency used to help us, even during the tablet distribution. We also use marketing agencies, advertising agencies, and media agencies. The research companies here in Egypt help us to make sure we are getting out the right message and reaching

most of the geographical areas. They are concerned with doing in-depth interviews, focus groups, field visits, and so on. Data collection is not something that you do while sitting in your office. You have to go to different places and interact with people. They go to schools and do on-the-ground analysis and surveys. You know, people's facial expressions are crucial, body language, how they perceive new things and so on. That is why I wanted to apply the strategies from market research here in the Ministry.

We also held competitions for students from Grades 10, 11 and 12, like research competitions. The point was for them to get resources from the Egyptian Knowledge Bank and do a research paper. The Minister visited students while they were taking a training. He also announced the scholarship winners during the closing ceremony. These were scholarships to study in Italy or private universities here in Egypt. It was a very exciting experience for them, and they felt very close to the Minister.

LH People in Egypt use WhatsApp a lot. Do you use it to send messages or communicate to the public?

YA It is very hard to communicate to the public through WhatsApp. However, the Minister himself is active on WhatsApp and Facebook. He wants to communicate to the people directly. Since he is a very down to earth person, he replies by himself. He even sometimes replies on Facebook when someone he does not know asks him a question. When I was at university, Facebook was booming but I never thought to text a professor or send him a message or anything. But Dr. Tarek is really communicating with people very easily, very openly (see Chapter 2 in this volume).

4. Messaging about Digital Transformation

LH When the new education system started to be rolled out in 2018, the media attention seemed especially fixated on the tablets for students in Grade 10, and later, the first electronic exam which did not go so well. How did you manage communication with the public on these topics?

YA In the beginning, before we distributed tablets to the students in Grade 10, many people were saying that students, especially the ones in Upper Egypt and rural areas, would not be able to work on a tablet,

they were not prepared. They said the tablets would get broken, lost, things like that. Nowadays students learn things on social media and online very easily, maybe more quickly than their parents. It is crucial to give them the tools to learn, or to put them on the path where they can excel. We made some infographic videos on how to start using and benefiting from the tablets and we broadcast them on TV and social media. These videos showed how to access different resources available on the Egyptian Knowledge Bank (EKB) and how it would serve them. The students are teenagers and online 24/7, so we wanted to reach them in the places where they are spending time. We found many people sharing and cross-posting these videos, and they went very viral. There were like millions of sharing posts about the tablets. It was huge.

The first electronic exam definitely had some problems.⁴ But this is very normal in any new initiative. When you try something for the first time it might have some problems, technical issues and so on. Yes, we witnessed a lot of critiques during this period. Initially people said, 'How come the Ministry is not prepared' and so on. However, the problems were fixed, and the system functioned very normally after that. Most of the students took the exam digitally. When the online system did not work in some places the students had a hard copy paper. So, we wanted to reassure them that if one system does not work there is a backup. They should not worry about it. The Minister talked to the students directly in a more emotional video message he posted on social media. In this case we wanted to communicate to the students themselves not their parents, not their teachers, not anyone else. We wanted a message, a very simple emotional message from the Minister to the students.⁵

We also conducted interviews with the students. We brought students from different schools and very different governorates to the Ministry. We asked them questions, such as about how they feel about having the tablet, what do they expect from it, and so on. In the

4 On 24 and 25 March 2019, about 600,000 students in Grade 10 took their first experimental exams (Arabic, Biology), using the tablets. Due to the volume of activity, the servers lagged and eventually the system crashed. Student grades were not affected since these were 'test' tests. The technical problems were eventually resolved in time for the official exams in May 2019, though some students demonstrated against this new system of electronic exams (Morsy 2019).

5 See the Minister's message to the Thanaweya Amma students recorded on 20 June 2020, <https://www.youtube.com/watch?v=CWiVT9Gmn7E>

beginning some of them were afraid that they might not be able to use it, or maybe the system might not work during the exams. But then they started to explore things by themselves. This is human nature. Their answers helped us in developing the script for the infographic videos for social media

LH Is part of your job to manage the image and communication behavior of the Minister himself?

YA Well, this is very good question and a hard question (laughs). Actually, people here in Egypt want to feel that the Minister is like them. They want to see him speaking a lot to them, whether on social media, talk shows, or in person. They want to see him a lot on school visits. For instance, he was recently in Sohag⁶ visiting one of the schools for disabled children. With school visits like this, we disseminate photos and news and sometimes they go viral. We also want people to see how the Minister is very down to earth. Students approach him when he is out shopping or something, and they talk with him and take selfies. He once told us about how a student in Grade 11 (in 2018) told him she wanted to be in Grade 10 to be able to get a tablet and benefit from the Egyptian Knowledge Bank. Sometimes we have conferences for students, and he spends a lot of time with them taking pictures and chatting.

LH Through these different media strategies, do you think you have been able to convince a good segment of the public about the value of the education reforms and why these changes have been made? How can you gauge if these media strategies are effective?

YA The truth is that most Egyptians do not actually like the old education system. We inherited a situation where many students did not want to go to school because they were not learning well. They preferred to stay at home or work to support the family income. The parents wanted something new that matches today's life. But, when we announced that we were going to have a reform for a new education system, most of them resisted. They fear change, especially when it comes to their children. So, even though parents say, 'Yes, it is better to

6 Sohag is a governorate in Upper Egypt situated on the West Bank of Nile Valley, about 470km from Cairo and 6km southwest of Achmim.

change the education system', when we started to change it they said, 'No, no, no, I got used to the old system'.

In the beginning it was especially shocking for all of them. It has been very difficult and challenging for us to change the mindset of the parents. We needed to clarify to parents and the public why we were changing the system and moving in a different direction. We needed to let them know that with the new education system we would be teaching the children life skills, how to live, how to eat healthy, how to cooperate with people, and so on. With time, especially for parents with children in the early grades (kindergarten to Grade 3), they started getting used to it. We are getting more positive feedback. Nowadays, parents are calling and asking the Ministry to accelerate the new education system because they see the impact on their younger children.

5. A Day on the Job

LH Can you describe a typical day on the job?

YA First thing in the morning, I have to go through any news about education, any critiques. I check social media to see if anything happened related to any school, any student, or any problem. I spend the first half an hour checking everything, doing my own research for the day. And then, depending on the situation, if something happened, we talk to the team and see how we can solve this, or how we can move forward. Other than that, if it is normal day, we have meetings with our partners. We have an internal meeting for things to follow up on, and we make plans for how to get engaged more with the students and parents. It depends.

Before I started working in the governmental sector, I thought that we will go home early, by 3:00 or 4:00 p.m. maximum. I thought the hours would be much shorter than in the advertising or marketing agency and I would go home early. But I stay at work longer hours than I used to in multinational agencies. It is not an easy job. You have a lot of responsibilities. But when you feel that you are doing something for a huge number, we have more than twenty million students, even if you are doing a very, very small part, you get a rewarding feeling.

LH We are talking here, face-to-face, as the global news is all about the spread of the coronavirus pandemic. Schools in different countries have been closing and there is huge public concern. How is this ministry communicating about this crisis?

YA Closing schools is a country-level decision. It is not only the decision of the Ministry of Education. The Prime Minister and the Minister of Health will weigh in on this decision. That is why His Excellency Dr. Tarek had a call yesterday with all UNESCO offices worldwide. He wanted to hear about the coronavirus in each country and what is happening with schools. He is really an active person and has a very good network with all entities. He is always looking out for the sake for the children and wants the best for them. People were getting really worried about schools being open and they were spreading rumors. We started to see many hashtags like 'No to education' and 'Our children's health'. The Minister wanted to calm people down. Two days ago, Dr. Tarek had telephone interviews with many anchors asking about what would happen with schools with the outbreak of the virus. His main goal was to calm down the mommies. He asked them to stop talking on social media and spreading rumors. He said, 'I know you are very worried about your children, but don't go on social media where there is fake news. If there is any news, I will tell you myself'. He was very emotional and direct in his message. So, that is an example of the kind of messages he is always trying to spread.

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9. Companion Video

Video 9.1 Yousra Allam: 'Media Strategy for Education Reform in Egypt', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 11 March 2020, YouTube, <https://www.youtube.com/watch?v=3mpnNOq8UQM>

10. UNICEF's Life Skills Framework Comes to Egypt: Interview with Manar Ahmed Sharouda

*Linda Herrera*¹

Abstract

UNICEF partnered with the Ministry of Education and Technical Education to help integrate its Life Skills and Citizenship Education (LSCE) framework into the new curriculum. Education Specialist Manar Ahmed Sharouda, recounts how the much-needed reforms prioritized early childhood education, play-based learning, and inclusive education. The process of turning ideas and policies into practice faced challenges due to difficult local conditions, the lack of a proper change management system and communication strategy, and absence of adequate evidence and data from the ground. Moreover, the reforms were pushed from the top without being coupled with a bottom-up approach where the school is the unit of reform.

Keywords

citizenship education, curriculum reform, early childhood education, inclusive education, life skills, play-based learning, project-based learning, social cohesion, strategic planning

1 This interview took place on 26 February 2020 at the UNICEF office in Cairo. Special thanks to members of the Education 2.0 Research and Documentation Project team Nairy AbdElShafy, Ahmed Alaa, and Mostafa Hanafy for their contributions to the questions, background research, and filming of the interview. For a video highlight of this interview, see <https://www.youtube.com/watch?v=OjpEy1EkilM>.

1. A Vision for Education Reform

LH UNICEF has been involved in Egypt's Education 2.0 reform from almost the very start in 2017. What did you think about this ambitious undertaking when you first heard about it?

MA I joined UNICEF on August 4th, 2017. Four days later, the Minister (Tarek Shawki) held a press conference where he announced that he was going to change the whole education system. He was not going to try to amend it, he would just take it down and have a new version of education. I am not sure why, but we as UNICEF were not invited to this press conference. I was going everywhere trying to get the Minister's presentation. It was in Arabic, so I had to translate it for my colleagues. He posed questions about why education was not working and what was happening in the Thanaweya Amma secondary exit exam. He talked about why we needed a new system, new thinking about how we understand learning and education, and what we want in 2030. There was this idea that we want a different graduate of the system, away from thinking only about grades. The competencies of this new person is what mattered. He said that children should feel happy about going to school, it should not feel like a punishment. I do think at certain times in this country, school is like a punishment, especially for very young children. I thought these ideas were absolutely inspiring. In UNICEF we felt it was an historic moment for this country and absolutely wanted to be part of it. I felt I had to jump into this. We wanted to support this vision. That was a very rewarding and exciting year for me, to see that something was going to happen with education. I think we at UNICEF were one of the first frontrunners supportive of Education 2.0.

LH What were the key points of alignment between the Ministry's vision for change and UNICEF's work in education?

MA At UNICEF—internally, globally, and in our MENA region—we had already started working on the idea that education is not only about knowledge acquisition and enrollments, though these are both very important, you also need to think about skills-based education. UNICEF developed the Life Skills and Citizenship Education (LSCE) framework which talks about why we need a different kind of education. In Egypt there were very high access and enrollment rates. The problem was

always about quality. Children were not learning. Dr. Tarek also started a dialogue about a learning crisis and how to overcome it. And I am not talking only about learning what is in the textbooks but learning for the future. What does it mean to be a twenty-first century young person? What would you bring to this country? What does it mean to your future? Are you ready to be employed? Are you ready to deal with all the social changes in the region? We have the refugee challenges, our social cohesion issues, and so many other issues. We started to say that maybe we can answer one small part of the question having to do with education during the early years.

LH When did UNICEF first introduce Life Skills and Citizenship Education (LSCE) to Egypt?

MA The LSCE framework started to be developed in 2014, so it predates this current reform. I was unfortunately not part of that process, which was very participatory.² We had workshops across different countries in the region, including with Egypt and the Ministry of Education. UNICEF had the conceptual and the programmatic framework and conducted a mapping analysis in the country. They did field visits and met with different people about what the words 'life skills' actually mean. There was a huge discussion around the word 'skills' and how it is different from 'competencies.'

The framework covers how to engage in a knowledge-based economy, how the world is changing, and how in twenty years you will not have the same jobs. One argument was that students in technical education across the region, not only Egypt, were being trained for jobs that will exist in ten years from now. At that time, no one in Egypt was speaking about an education reform, or 'transformation' as Dr. Tarek calls it. No one was calling for taking down the old system and building something new. Back then, the idea was that we can add the Life Skills to existing education systems. We did not tell anyone they needed to change their curricula. UNICEF usually does not go for this radical advice. We usually leave it to the country to decide.

2 See UNICEF MENA Regional Office 2017a and UNICEF MENA Regional Office 2017b.

Then early in 2017, UNICEF started introducing the finished LSCE conceptual framework to the partners, donors, and people from the Ministry including the Minister and his advisors. After multiple attempts to get him to read it, Dr. Tarek finally read the conceptual framework in detail and was convinced. He thought the concept was in line with his vision for Education 2.0. We approached members of his team, Dr. Deena Boraie (Senior Advisor), Nelly El Zayat (Advisor), and Dr. Nawal Shalaby (Director of the Center for Curriculum and Instructional Materials Development, CCIMD) about mainstreaming LSCE. We asked them to come with us in October 2017 to a high-level conference in Amman where we were announcing the framework with representatives from fourteen countries across the region. A representative from Egypt's Ministry of Youth and Sports also attended since they had already adopted the framework. This pushed the Minister of Education to officially request UNICEF to mainstream LSCE in the curriculum update. At this time, this framework was very theoretical. Now, we call Egypt one of the 'champion countries' because it was the first country to integrate the LSCE framework.

LH Thinking about the timing of the LSCE framework, it was being developed in 2014 when many societies in the MENA region were just coming out of a period of uprisings. Were the popular calls for social, political, and economic change something UNICEF took into consideration when developing the framework?

MA Absolutely, there is a component on civic participation. In the conceptual framework, there is a huge part on how young people in this region are frustrated because they are not taken as part of the solution, they are always seen as the challenge. We always say 60% of our population is young, which is something to celebrate. But the country keeps saying, 'Ah, we are not able to provide good quality education, health, housing, job opportunities'. So, part of the discussion has been about what you can do to improve youth engagement, their prospects in the labor market, and how you can help them to better understand each other and be more socially accountable and responsible. Social cohesion is also a key challenge in a region that is facing wars and displacement both internally and externally. We have the challenge of the refugees. We call Egypt a country of destination and transit. Refugees come here

as a door to go to Europe, but it is also a place to stay. So, our education should prepare young people to deal with the refugee crisis, for a different economy.

LH Have other countries in the MENA region adopted the LSCE framework?

MA The framework has been adapted in some form or the other by most countries in the MENA region, including Algeria, Djibouti, Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Sudan, Syria, Tunisia, Yemen, and Oman. However, Egypt and Tunisia used the framework as a foundation for their new national curriculum. I think India is also one of the countries that endorsed it. The skills development agenda is now part of UNICEF's new education strategy. But remember, Egypt is a champion country. Before Egypt, we did not even know how to integrate it. Tunisia started their education reform before Egypt and are taking it slower than Egypt. They are having their own piloting and are assessing the outcomes. Their timeframe is very different from the one here in Egypt.

2. Integrating Life Skills and Citizenship Education into the Egyptian Context

LH The LSCE general framework was designed as a regional framework. How did UNICEF and your Egyptian counterparts ensure its suitability and relevance for the Egyptian context?

MA When we announced this framework in Amman in October 2017, we did not know how we would be able to operationalize it or what it would mean to countries and policy makers. About a year later, when we came up with a document, 'Analytical Mapping of Life Skills and Citizenship Education in The Middle East and North Africa'.³ Egypt was one of the first countries to teach us what to do, it was a solution country. There are twelve core skills, and Egypt added two additional ones, 'productivity' and 'accountability' (see Chapter 7 and Chapter 13 in this volume).

We started meeting with Dr. Tarek, Dr. Deena, Nelly, and Dr. Nawal after the Amman conference. As I said, they were talking about a vision

3 See Hoskins and Liu 2019.

for changing education, but it was not clear to anyone what that meant. Dr. Tarek kept saying, 'I want to bring fun back to the classroom. I want children to enjoy learning and education'. We started to talk about the competencies of the future. Dr. Nawal and her team at CCIMD were already in the process of thinking about Egypt's vision for the new curriculum and how UNICEF could help. We were pushing for the idea that you need to have a skills-based education system where you are promoting knowledge *and* promoting skills. When you integrate skills, you can bring in fun. We started discussing project-based learning and play-based learning, especially in the early years when children can acquire skills like communication, negotiation, empathy, showing respect to diversity and all of that.

LH The CCIMD is a local Egyptian institution, and UNICEF is an international UN organization. Can you talk about the dynamics and work relationship between these two bodies, especially regarding curriculum reform?

MA I was present in every CCIMD workshop for designing the early curriculum frameworks. Dr. Nawal was talking about having a multidisciplinary framework. She kept telling us she did not want our help in the subject curricula and did not want Life Skills as a separate module. She wanted it to be an integral part of the story of how teachers deliver the content and manage the classroom. She said that when Life Skills are fully integrated into the curriculum, you will not be able to take them out later on.

I remember thinking in our very first workshop that they did not take me very seriously. I think they thought I was young, without a Ph.D., and not a curriculum specialist (I have a Master's degree from the American University in Cairo in Public Policy and a second Master's in International Education Management and Leadership). My background is in policy, but I was there to speak about skills! I think we initially only had the support of Dr. Nawal. But even with Dr. Nawal I remember, and we all joke about this with her now, there was one time when she kicked the UNICEF contingent out of her room. She kept on saying, 'You are here to answer one main question. How are we going to integrate the Life Skills into the curricula?' And we kept on saying we are learning together; we did not have a clear answer. I mean, the LSCE framework was there, but Egypt was the first country to apply it. And she said, 'Okay, either you

come up with the answer or I will come up with the answer and I will share it with you'. It was at 9:00 p.m. in her office and she stood up. I understood that she was asking us to leave. Hana (Yoshimoto, Chief of Education, UNICEF), and I were together. I was so embarrassed, and we just left. But then it was fine, we pulled it together and we were able to, not provide all the answers, but it became very much a collective work. We started helping each other to find the answers.

3. Prioritizing Inclusive Education

LH Inclusive education has become mainstreamed in reform initiatives across the globe. What role has UNICEF played in defining and promoting inclusive educational policies in Egypt?

MA When we joined CCIMD in late 2017 in the design of the curriculum framework, things were moving very fast. We addressed the issue of inclusive education on multiple occasions. We spoke a lot about differentiated learning. All children have special needs regardless of how we assess their capacities and their abilities. Inclusion is also important for assessment. The focus is usually on the sensory, on how to present an exam for children with sensory disabilities. In 2019, we started the discussion again about what the Education 2.0 reform means for inclusive education. At the same time, the Ministry started to say we have special education schools for children with severe mental disabilities. These children have their own schools, and they have different curricula, they do not take the national mainstream curricula.

What we did with CCIMD was to develop the special education curricula framework. We were looking into children with sensory disabilities, and children with simple and mild disabilities. In an inclusive education model, these children are eligible to attend the mainstream schools. However, you need what we call 'adaptation' and 'accommodation' of the learning outcomes. You need to adjust the learning materials whether they are paper-based or digital materials. So, with the CCIMD, we came up with some guidelines for the publishers of the paper-based and digital materials on how to adjust materials to meet the needs of children with sensory disabilities. Then we came up with the Teacher's Guide on inclusive education.

A few months ago, we were having a discussion with Dr. Reda Hegazy when he was still the Undersecretary for General Education, before he became the Deputy Minister of Education for Teachers' Affairs.⁴ We were discussing that in future years, and Dr. Nawal is pushing for this as well, we should not have a separate Teacher's Guide for inclusive education. There has to be a single integrated Teacher's Guide because it is for the same teacher in the same classroom. Teachers must understand differentiated learning, that every child has a different educational need, they are not the same. So hopefully in the coming years, Egypt will be able to merge the two Teacher's Guides. We will not reinvent the wheel, but from day one inclusion should be a key component of how we see education.

LH Not everyone understands 'inclusive education' in the same way. UNICEF uses the term in its documents to include sensory and cognitive differences, diversity, and also some emotional psychological aspects. Can you clarify the term? Are teachers aware of definitions of inclusive education and what it means for their classrooms?

MA For UNICEF, the word 'inclusion' is bigger than children with disabilities because you also want to include refugees, for example. You also want to include girls to make sure that girls have the same right to education. You want to include children from different ethnic groups. So, inclusion is a big word. Currently, the way it is used in Egypt is specifically focusing on children with disabilities. But going back to the idea that children have different educational needs, all children need to be looked at in an inclusive manner.

Egypt has its own criteria for how to admit children into (mainstream) schools. Children with autism, for example, are eligible to go into classrooms. And of course, these children represent a spectrum and have different challenges. They might be challenges in communication, or in something else. You have different children in the classroom with different needs, and the teacher should be aware of how to identify them. We had workshops with international experts and colleagues at Zagazig University (Faculty of Disabilities Sciences and Rehabilitation). It was

4 Dr. Reda Hegazy served as the Deputy Minister of Education for Teachers' Affairs under Dr. Tarek Shawki. With the change of the Egyptian cabinet on 13 August 2022, he succeeded Dr. Tarek and became the Minister of Education and Technical Education until July 2024.

important to bring Egyptian Academics to the table. We were trying to provide awareness to how educators can observe a child's special needs and ways to address these issues (see Chapter 8 in this volume).

I think we need to do better awareness and training for inclusion more generally. For example, what does inclusion mean for the teacher with a refugee child in the room? Would it make a difference for the teacher? Should a teacher do something if the classroom is mixed with boys and girls? Are there specific practices that would ensure a gender sensitive classroom where girls feel included? I was recently in a mixed middle school with girls sitting on one side of the classroom and boys on the other side. The teacher was female. Her back was always to the girls. I am sure she was not aware of this. But I kept thinking about how this made the girls feel. What does real inclusion mean in the classroom context?

4. A Call for Strategic Planning and Management

LH This education reform is being rolled out with extraordinary speed. As UNICEF, what do you see as the main challenges and how do you think the process can be improved?

MA The reform is great, but it is very top-down. I really think reform cannot be pushed only from the top. It must be coupled with a bottom-up approach where the school is the unit of reform and there is an understanding of what it means in the classroom and to the teacher. Schools must own the reform. There are certain structures inside the school that can support change. You need to look and see what is there and build on it. How do teachers support each other? How is the school management supporting this system? How are parents supporting this system? There are communities of practice which some of the national teacher trainings are doing, but again, ownership is not with the school. If you do not create ownership at the school level, it will not be sustainable. This cannot be achieved with only two, five, ten, or even twenty days of training. These external trainings with coaches and mentors running from here to there, are very costly and will stop one day. I mean, this is not a sustainable model from a change-management point of view.

I think one challenge is that we do not have a shared common plan as a guiding document among all partners. A vision is great, but you

need to develop it into a strategy, an action plan that you can consult.⁵ This is a way to manage not only the reform, but also the partners. We still do not know what it means on the ground. Do we have the resources? Are schools ready? Is the Ministry itself ready? And by the Ministry I do not mean Dr. Tarek and his team of advisors, but the technocrats and bureaucrats within the Ministry itself. Are they part of the design of this? There have been so many questions and of course there have been doubts. I think schools should have been better oriented. Up until August 2018, schools did not know there was anything happening, it was business as usual. Many schools had already started to have the bidding to buy the new books. They were not even aware there were new books coming in September. They were just doing the same as every year.

I once read an article about how education reform is one of the most difficult kinds of reforms because of the huge political connotations and the level of conflict of interests. Egypt can be a good case study because of the stakes of the private sector. You have the private tutoring, you have the private schools, you have the private publishing companies. What does it mean for them?

LH Based on your experience, what would have been a better way to manage the reform?

MA I did some research in change management and especially in education. There is no model for change management in education. It usually comes from business. There are a number of key steps that are in all models. One of them is the need to communicate the change. What is your communication plan? Early in the reform we went to the Ministry, not to the Minister, and said we wanted to help them with a communication plan. UNICEF is very good at this. Our office in Egypt is second only to our New York office. We are that good across the world.

5 The Ministry of Education and Technical Education eventually completed an Education Sector Plan in 2023 (see MOETE 2023). The Development Partners of the Local Education Group (LEG) in Egypt that comprises donors, civil society organizations, and international non-governmental organizations, specifically USAID, World Bank, EU, Save the Children, GIZ, UNESCO, ISBD, CARE, FCDO, British Council, UNICEF, Sawaris Foundation, JICA, ILO, and Federation of Egyptian Industries (FEI) endorsed this plan in 2023 (see Global Partnerships in Education 2023).

And we said we wanted to help. We wanted people to understand and be more supportive of this change. The Ministry did not want us to do this work. I am sure they had their reasons—maybe political, maybe social, there are so many reasons when you make such decisions. In the end, we did not do the work. But I think one key challenge they faced was the lack of communication starting within the Ministry, with the undersecretaries, different governorates, schools, principals. In some cases, the educational inspectors, the supervisors, did not even know there was a reform. How were they supposed to give support to the teachers? But even beyond this, you have parents and the private sector who were not informed.

LH Dr. Tarek and his team talk a lot about the importance of reaching mothers since they are the ones who tend to follow-up with the younger children. How can communication with them be improved?

MA If you follow all the parents' groups on WhatsApp, Facebook, and all the social media, teachers and mothers did not understand what the Ministry was doing. Mothers specifically, and I am also a mother, so I understand, are usually the ones to study with their children. If children are returning home with absolutely no homework, and the mother does not understand what is in the book since they are more about activities rather than conventional lessons, they do not know what to do. And I think teachers and school principals were feeling the same. At least in the first semester, it was very hectic for everyone. Some mothers were voicing their concerns. But all the media attention was focused on the Thanaweya Amma.

LH: The reforms were implemented nationwide without being piloted and many international partners took issue with this. What did you think about this approach?

MA I remember Dr. Tarek was always saying in different conferences, meetings, and seminars when asked about this big change, 'It will never be worse than what we have now, so chill' (laughs). What exactly was the country going to lose? Dr. Deena was always saying, 'Do not mention the word "pilot" anymore. We are not piloting anything'. (See Chapter 5 in this volume.) I think we all, both national and international partners, understood that that the Ministry was fed up with all the piloting and

models that were conducted in the past that never showed a large impact. In Egypt we have these experimental schools, but they have been experimental for thirty years. Why? And even in meetings with the Minister I kind of understood his point. He was saying, 'If this works in 20% of the schools, then this is actually a change'. This resonated with me. What was this country going to lose? At UNICEF we say we are for every child, and we want to reach every child, of course. However, at the end of the day, if only 20% of children experience a positive change, it is better than none.

But generally speaking, doing a large-scale change without a pilot comes with a higher risk. And I think it could have been better managed with a monitoring system in place before the rollout. There should have been a plan about who is going to follow up on what. Who is responsible for what? We could have had a way to sample schools based on, for instance, geographical areas, socioeconomic conditions, capacity of the schools. We could have found criteria where we could have actually learned from the ground.

I remember in the early days there was one time when the Minister said, 'We want to document what is happening, we want to learn from it'. I think it was an interesting idea to learn from the ground, but things were moving fast, and it was very hard to get everything. Education 2.0 was rolled out at the same time as the introduction of the computer-based assessment system at the secondary level. Everyone was focusing on the exam and forgot about what was happening with the early years except for parents. Maybe that ended up being an advantage to Education 2.0 somehow.

5. The Need for Evidence

LH Without evidence from schools, homes, students, teachers, how can we know if change is taking place and the nature of that change?

MA The problem is that we do not have evidence of what is happening on the ground. We really don't. I meet teachers all the time. Some of them are amazing, and some of them are indifferent—their attitude is, 'To hell with the country, the parents, the children, the system'. But I do not know what is happening in the classroom. We need to have evidence from the ground, and it will not be through assessments, meaning the

Grade 4 exam, because what we are discussing here is not measured by how students can read and write. We need evidence about how children deal with situations, how they respond.

From what I can see, you have a shift starting from Grade 1, a mind shift as teachers move away from teaching single subjects into multidisciplinary teaching and Life Skills. You also have project-based learning and changes with how children are being seated in the classroom. The assessment is also different. It takes time for all of these things to sink in and for teachers to start to change their behavior in the classroom. At a certain point, teachers will need to be more innovative, more creative. Teachers are key in this process, and the school environment is key. As long as schools are not ready enough, the curriculum is only one aspect of it. Assessment is important, but again it is not the only way of how you can assess what is happening.

UNICEF's MENA region office together with the World Bank came up with an early measurement, an instrument of the Life Skills. Egypt is one of the countries where we have been field testing. Egypt already piloted the tool last April (2019). It is a very challenging task for a number of reasons. Children have to read and then answer the questions, so you require a certain level of literacy. When we were doing the Life Skills measurement tool in Egypt, Tunisia, and Palestine, we were discussing that the quantitative tool needed to be supplemented by qualitative research. You need to use more observations in the classroom, to understand the change in the behavior of children with each other. It is all about how they talk to each other, how they think, what they do. It is not about what they will write. It is not an easy thing. Egypt should not be expecting big changes in two or three years. It will take a long time. It will take endurance.

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8. Companion Video

Video 10.1 Manar Ahmed Sharouda: 'UNICEF and Education 2.0 Reform in Egypt', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 26 February 2020, YouTube, <https://www.youtube.com/watch?v=OjpEy1EkilM>

II. A Life in Education from Academia to the World Bank: Interview with Juan Manual Moreno

*Linda Herrera*¹

Abstract

Juan Manual Moreno served as the Lead Education Specialist in the Middle East and North Africa (MENA) region for the World Bank during the initial years of the Education 2.0 reforms. He reflects on his life in international education and ponders Egypt's particularly securitized approach to its schools and the resilience of the Thanaweya Amma exam. He addresses misconceptions about the Bank and explains how it negotiates sectoral strategies with each country. He cautions that even with advances of digital transformation, nothing can replace the face-to-face school, classroom, and teacher, and stresses the value of research and data to diagnose problems and form an inclusive vision of education which is needed for a country's future survival.

Keywords

cultural capital gap, COVID-19, digital transformation, human capital, equity, quality of education, security, teacher professional development, Thanaweya Amma

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- 1 This interview took place on 21 May 2020 via Zoom. Many thanks to Nelly El Zayat and Nairy AbdeIshafy, members of the Education 2.0 Research and Documentation Project team, who assisted with background research and questions. For a video excerpt of this interview see <https://www.youtube.com/watch?v=fMPQ3xP8OFM>.

1. A Family of Educators

LH How did you get involved in the field of education policy and research?

JM² In my case, you do not have to explore deeply, it is pretty clear. I am the fourth generation of teachers in my family. It goes back more than a century. My father was a university professor in the field of education. My mom was an education supervisor in the public-school system in Spain. My grandma was a multigrade rural schoolteacher somewhere in La Mancha. The street where she lived is named after her. There are not that many teachers who have got a street named after them, right? So that has got to be a small town. There is another branch of the family with all the doctors, nurses, et cetera. We are the education branch of the family. Education is a matter of identity and a certain pride for the family. I have been surrounded by this world ever since I was born. I was particularly influenced by my dad. After high school, I chose to study education in Madrid. I got a scholarship to study at Teachers College, Columbia University, where I got in contact with a very good scholar and did my Ph.D.

After the Ph.D., I got into academia at the National Open University of Spain. I then made the mistake of getting into university politics which I experienced at the highest level for four years as Vice Rector. That almost killed me in terms of stress. As you know, university politics are dirtier than real politics. There is a very famous quote by Henry Kissinger during a speech he was giving at a university. Someone asked him, 'Dr. Kissinger, why are university politics so dirty?' He answered, 'University politics are vicious precisely because the stakes are so small'. I think that is a brilliant response.

Somebody sent my CV to the World Bank during a batch-recruitment of mid-career education professionals. I interviewed and was offered the job. I went to the Bank straight from the experience of university politics. The first year I thought I was on sabbatical. I initially planned to be there for two years, but I have been there now for eighteen years. I will go back to academia at the end of this calendar year (2020), should

2 Disclaimer: The responses of Juan Manuel Moreno reflect personal opinions and analysis and in no way represent the official position of the World Bank. See Moreno's LinkedIn profile for more details about his professional trajectory, <https://www.linkedin.com/in/juan-manuel-moreno-50200017/>.

the situation permit and should universities survive this situation (the COVID-19 pandemic) (laughs). So, that is a long answer to your question, and just to tell you how easy it is to explain how I got into this sector and into this world.

LH Prior to joining the World Bank, were you involved in international education?

JM My university had a lot of international activity. I ended up being responsible for international relations and international projects. The university is huge, it has 1,000 employees, sixty centers throughout Spain, and sixteen centers in different countries, mainly in Europe and Latin America. So, once I was engaged in the international dimension of the university, I got into all sorts of international development projects. I also served as a visiting professor at universities in Mexico, Cuba, Costa Rica, and other countries. We had doctoral programs in many of these countries. I started working internationally very early in my career as an academic and a researcher.

2. Working Globally

LH In your position as Lead Education Specialist at the World Bank, you have been in the unique position of seeing education policy reforms in action in different parts the world. What regions and countries have you worked in?

JM I have worked in thirty-one countries. In some countries I have worked for seven years, and in others for seven weeks. Most of this occurred during my tenure at the World Bank, but some started before, like in Cuba, Costa Rica, and Hungary. Hungary was an interesting case. In the early 1990s, shortly after the fall of the Berlin Wall, the European Union started very aggressively working with the former Warsaw Pact countries in Eastern Europe with all sorts of programs and projects for universities, research institutions, bringing these people into the European game. There was a lot of work in countries like the Czech Republic, Poland, and Hungary, with lots of money flowing in that direction. There were incentives for academics to bring those people into their professional communities. For a couple of years, I was going to Hungary every other month, that was one of my very first countries.

Then at the Bank, I got into the Central Office, the central department of education which is the control tower. This is where people form ideas, write reports, and all that. When you are there, you get cross support from the other regions. The Berlin Wall fell in 1989 and the Soviet Union was dismantled in 1991/early 1992, so the transition politically speaking, happened at this time. But socially and culturally, the most important stages of the transition had already taken place. Between 2003 to 2006 I had been giving cross-support to Ukraine, Tajikistan, and Uzbekistan. Starting about 2006, I spent nearly four years in the Europe and Central Asia (ECA) region, working primarily in the Stans and the Caucasus—Armenia, Azerbaijan, and Tajikistan. I moved from ECA to MENA (Middle East and North Africa) in 2009. MENA was quite a different story. The years in MENA from 2010-2013 included the so-called Arab Spring and then immediately thereafter, the Syrian war and the Syrian refugee crisis in Jordan and in Lebanon, plus everything that was going on in Palestine. I have been in MENA for eleven years and been the team leader first for Lebanon and Jordan, and then I added Palestine. I ended up with the Jewel of the Crown which is Egypt.

LH When you start work in a new country, how do you orient yourself? What are the ways you identify the key education issues?

JM You know, different institutions have different comparative advantages, different strong points. One clear comparative advantage of the World Bank is that the education economists of the world are there. You have the good ones who are very sophisticated, and you have the bad ones, in the sense that they are more traditional, less sophisticated. In any case, one of our comparative advantages is to be able to do public expenditure reviews, to see how much money is going to the sector, who is making decisions about it, how that money is allocated, how much of it is actually spent, what is the impact of those expenditures on quality and on equity, and how you measure that. There is no other education donor out there who has this kind of expertise. When you see one of these public expenditure tracking reviews—which follows the donor from parliament to the most remote classroom—that gives you an amazing view of what is going on.

You add to that getting to the country and going to two, three, or four schools and sitting down with school principals. By definition, school

principals are the people who know more about the system. They are right there at the front lines between the managers, administrators, and politicians. They speak both languages and they understand both. Sometimes they are heavily confused, sometimes they are very angry, but one thing for sure is they know what they are talking about. So, once you find your school principal, the one who is really good, every time you go to the country you go and see that person. That is the first thing you do. You touch base with that school principal.

If you put together information from your school principal with those technical reports on public finance and governance structures, add to that international testing programs if you have them—which is not the ultimate most important thing for me though for many of my colleagues they are—you have a very good view. I would also turn to public records. You also have access to the minister, deputy ministers, et cetera, and you can sit down with them and have meaningful conversations and get a very good sense of what is going on. And then, you are able to mobilize the resources of your institution and your team to try and add value to the situation. I find that when you combine quantitative information with all the qualitative sources of information that you get visiting schools and talking to people who know the system, who have been there for decades in some cases and who can distill all their wisdom in a conversation, that is fantastic. Sometimes I learn way more about the system by talking to a principal than reading reports. So, that has been my approach in whatever country I have worked with for the Bank.

3. Working in Egypt

LH In Egypt, do you have that local level understanding of education that comes with visiting schools and getting to know school principals?

JM No, in Egypt that has been one of my problems. When I started working there in 2017, there was all this urgency to prepare these projects. One of the issues was, you know, the so-called ‘security clearances’. For example, earlier this year (2020) in a mission with Andreas Blom, the new Manager in the World Bank’s Education Global Practice for the MENA region, he asked if it was possible to go visit a couple of schools. It needed some back and forth to get the security clearance and you have to respect it. But the transaction cost of getting a school visit is

huge. And then, the whole thing is so inflexibly arranged that part of the purpose is lost. So, this was something that I missed during my time in Egypt. I was aware of the security issues in Egypt, but I still cannot understand why it is so complicated just to go visit a school. As I said, I am the son, grandson, and great grandson of teachers. I am not going to bite anybody (laughs) even if I work for the World Bank. But anyway, security is security. My own institution is extremely risk averse, so I can only understand that other people are too. But I have missed that part of the story in Egypt, and I think I am way less knowledgeable about education in Egypt precisely for this reason.

LH Is the security situation in Egypt comparable to other countries you have worked in?

JM It is way worse. I never had this problem before. I would arrive in a country and sometimes go to the school on my own. No, no, I have never seen this before. I think this is a delicate matter, but I guess it has to do with the relative lack of trust from the government towards international organizations, NGOs, et cetera. And then everybody gets put in the same package, even though World Bank officials are not the same as, you know, teenagers from an NGO. But somehow from a security point of view, they are all lumped together. So, I think it is that lack of trust combined with this sense of protection of a national institution which is considered very delicate from a security point of view. To be honest with you, I do not know what else can be behind it. There is a political agenda behind it that you need to understand, and you need to respect. You need to work with what you have. So, that is what you have. I have seen a lot of very strange things all over the place, and I am not going to be surprised, but this was certainly a loss.

LH In the absence of talking to school principals and making school visits, how can you assess the quality of education in Egypt?

JM One thing I try to do is ask people what counts as quality education in this country. I do a lot of presentations and public speaking in countries in the MENA, in Jordan, Lebanon, Palestine, Morocco, Algeria, and Egypt. I ask the audience, 'What is quality of education for you?' I have asked this question many, many times to different audiences. I ask if quality of education means that your kids acquire the competencies of the

twenty-first century or is it that your child scores 99% in the Thanaweya Amma, or the *Tawjihi*, or the BAC (Le baccalauréat general), depending on the school leaving exam of a given country. If the score is what counts for families, teachers, or policy makers, then you are going to need to factor that into your dialogue, otherwise people are not going to understand what you are saying. Overwhelmingly, they say that the student scoring 99% in the exam is the marker of quality. If you ask my colleagues at the World Bank, they will tell you that quality is what PISA (Programme for International Student Assessment) measures, which is a very similar answer by the way.

4. Barriers to Changing the Thanaweya Amma

LH From the start of Education 2.0 (2017) reform, the Minister Tarek Shawki has been trying to change the Thanaweya Amma exam and system but has encountered a lot of resistance. Based on your experience in the region, are there pathways to changing these kinds of high-stakes high school exit/university entrance exams?

JM This is an interesting question. In 2006, the team leader for the World Bank in Egypt was my colleague, Michel Welmond.³ He had been working with me in 2005 as a peer reviewer of the first report produced by the Bank on secondary education.⁴ He said, 'Look, I am working in Egypt. It is amazing what is going on with this Thanaweya Amma exam. I convinced the Minister to have a closed-door session with you. You can present your views on this exam with very concrete options on what to do'. In fact, my Ph.D. dissertation was a comparative study of secondary graduation/university access examinations or tests in six countries. I have been working on that particular issue for thirty years now.

I went to Egypt in September 2006 and had that session with the minister Yousry El-Gamal⁵ about the Thanaweya Amma. That

3 Michel Welmond joined the World Bank in 2002 and served as a Lead Education Specialist. He is a co-author of the MENA flagship report, 'A Road Not Travelled' (The World Bank 2008).

4 See Moreno and Ernesto 2005.

5 Yousry Saber Hussein El-Gamal was Egypt's Minister of Education from 2004 to January 2010 during the presidency of Hosni Mubarak. He was replaced by Ahmed Zaki Badr, the son of the former Minister of Interior (2010-2011).

PowerPoint presentation is as relevant today as it was fifteen years ago. The response of the Minister was, 'This is a great analysis. I agree with everything you are saying. But I do not dare touch anything on this matter because I would be eaten by the wolves and my remains would be scattered in the streets (laughs)'. This was September of 2006. He basically said that even though he agreed with what I was presenting, he did not have the political capital to push in this direction. That was the conclusion of the meeting.

LH What changes to the Thanaweya Amma were you proposing?

JM I was making an analysis of the situation and suggesting that at the end of high school you ensure that the student graduates on the one hand, and after that, you get people to compete for programs in the university. I have been suggesting this more recently in Jordan and Palestine with the *Tawjihi* exam. You can combine some kind of equity approach so that people are not forced to fail high school. This way, you have your school graduation certificate. And if you want to keep your highly competitive exam for university admission, you keep it.

I think Dr. Tarek had this in mind at the very beginning of the reform. Dr. Tarek, Deena Boraie, and I had lots of discussions on these matters back in 2017 and throughout 2018. Dr. Tarek's initial idea is very similar to what I had proposed in 2006. This was essentially for the exam to serve a double function, the first being to make sure that everybody leaves high school with a piece of paper, a high school diploma. This certificate would open the door not only to the low-skilled labor market, but to further education opportunities. Then, for those who wish to compete for a place at the university, either at that point or later, you can keep the competition open, but it should not be forced onto the entire student population. This decision cannot only be decided by the Ministry of Education. You also have the Ministry of Higher Education. In many countries basic education and higher education are under a single ministry and this makes things a little bit easier. But this is not the case in Egypt (see Chapter 6 in this volume).

LH Where did this idea for a double function exam like the Thanaweya Amma come from? Have countries that originated this model shifted to something else?

JM If you go to the history of Western Europe this double function of the examination made sense. For a very long time, everybody who made it to the very last year of secondary school, about 5% or 6% of the student population, was meant to go to university. Splitting up the exam to serve a double function was not really necessary. Put it this way; graduating and getting into university was one and the same thing. The two oldest exams are the Abitur in Germany and the BAC in France. The BAC was established by Napoleon in 1808, and the Abitur was established in Germany in 1788, just before the French Revolution when there were German states. There was not even a Germany back then, so the Abitur is even older than Germany. And these two exams, especially the BAC, no longer have the double function. The BAC is officially considered not only the high school degree, but also the first tertiary education degree. Legally, it is already a higher education degree. So, when you have a small elite getting to that point it is not an issue.

However, when you are approaching universal high school and want 70%, 80%, 90% of your student population to get to the last year of the secondary stage, then the game changes completely. You need to do something about it, because those people, those 80-90% are not going to or even aiming for, those top schools or faculties. Even if they were, they would not stand a chance. So, you need to get that articulation between secondary and tertiary education way more sophisticated, flexible, and inclusive, otherwise you are going to have trouble. If you look at western European countries, they have de facto made sure that the masses reaching the end of high school are able to graduate first and then compete for places in higher education.

In the United States, you have an expanding tertiary education sector with non-competitive or non-cut-throat competitive places made possible, for example, by the community colleges. After you graduate from high school you can go to a community college. If you do well, you can jump from the community college to the state university and get a very prestigious degree. And then you can be eligible to move to graduate school in an Ivy League university. That can be done. You do not need to be a sheer genius to do that. That is the kind of thing that we need in Egypt and in many of the MENA countries where they are in many cases still following a nineteenth century approach about how to succeed academically. In this approach, there is only one way to succeed, and it is

a hard, high-stakes way that was designed precisely to leave most people out. It is not that this system is failing, it is doing exactly what it was designed to do, to skim the 3-4% of those academically able students and leave everybody else out. So, when you reach the twenty-first century and you have all this rhetoric of inclusiveness, universal education, and quality for all, this elitist system by design cannot be kept in place.

Egypt is a great example of this fantastic contradiction, this sheer clash between the political rhetoric of inclusiveness and democratization and universalization of education skills and competencies, with a nineteenth-century design. In both Morocco and Egypt, up to the late 1960s, a university graduate would get a public sector job automatically. That was not that long ago. It is like being in a time machine with the twenty-first century and the nineteenth century co-existing in the same classroom.

5. The World Bank and Education Reform

LH You were the World Bank's Senior Operations Officer as the loan 'Supporting Egypt Education Reform Project' was being negotiated.⁶ How does the World Bank work with recipient countries on education policy and reform?

JM This is probably one of the many misunderstandings about the Bank. I get lots of invitations to speak about World Bank education policies in ECA or MENA. But the Bank does not have any policy, the Bank has strategies, and these are sectoral strategies, regional strategies, and country strategies. The country strategies are called 'Country Partnership Strategy' or 'Country Partnership Framework' (CPF), which is a more recent name for this. The Bank engages in a dialogue with the country, with the government, about all sectors.

The Country Director is the one who is responsible for that dialogue. Then, you have those people working in the sectors along parallel dialogue lines. You work together with the government to come up with a vision for the country where you can exploit the comparative advantage and contribution of the Bank. It is true that the Bank influences policy for those who want to be influenced, let us put it that way. Iran is less amenable to influence than Egypt, and North Korea is

6 For more details on this loan in Egypt, see Moreno 2018 and Chapter 12 in this volume.

way less amenable to influence from the Bank or from anybody else. So, that is an easy one to grasp. So yes, there is influence, but there is no setting up of a policy.

I have been involved in that dialogue in all the countries that I have worked for. The thing I have learned is that you need two things for somebody working in development, whether with the Bank, UNICEF, a small NGO, it really does not matter. First, you need very strong technical knowledge, and second, you need to be able to communicate very well with your counterparts.

LH In the context of the Bank, what does it mean to have strong technical knowledge in education?

JM There are many things, but in general technical knowledge means that you know your sector and you are not just a specialist. It can help a lot if you are a specialist when you are doing something like a learning assessment. In this case, you should know a lot about literacy tests. That is fantastic and you can be a very good consultant. But when you are leading the dialogue with the government, in the ideal situation, you are a kind of a shadow minister, but a shadow minister that is there to help.

You need to have a broad view of education policy issues in that country to the same extent as the minister. That means you are strong on education finance, strong in what they call the 'political economy', which is what normal people may call 'dirty politics'. In other words, you know the political game in terms of who wins and who loses, what the risks are, who has political backing to dare to be brave, and who does not. You can go down all the issues of equity, quality, efficiency, effectiveness, school leadership, school improvement processes, the financial and governance choices that you have before you to push in this or that direction. You need to be able to have a policy dialogue which is well-supported by technical knowledge of different areas, topics, and challenges in your sector.

LH You mentioned good communication with your counterpart as the second quality. What are some features of that strong communication?

JM You need to be wearing their T-shirt. For example, in Mexico you need to be wearing the tricolor. Unless they feel that you are wearing their T-shirt with a number and your name on the back and you are glad and

proud to do that, you do not have a chance. It does not matter if you are the World Bank or you are, you know, Idiots Without Borders (laughs), it really does not matter. This is even more true with the more sophisticated countries with more capable counterparts. So, when you are working with large countries, medium-income countries like Indonesia, Egypt, Brazil et cetera, these are sine qua non conditions. When somebody says, 'Ah, you are imposing...' I am sorry, I am not going to Mexico or Egypt to impose anything. They would put you in a car and send you to the airport.

6. COVID-19 and the Acceleration of Digital Transformation

LH We are speaking during the COVID-19 pandemic which has upended schooling as we know it and accelerated change. For example, students in Grades 4-9 have recently completed research projects instead of sitting for end-of-year exams, something entirely novel. Could this crisis present an opportunity to get students and teachers in the practice of more competency-based learning?

JM They say, 'Never waste a good crisis'. I think there is a space here to get meaningful change in an area where it is very difficult to make changes. We know this, and Dr. Tarek knows this very well. You said COVID-19 is an 'accelerator' and I agree. This is a crisis which is going to accelerate processes that were ongoing before, but it is going to accelerate the risks too. Everything is being accelerated, the good things and the bad things. The opportunities and the risks are equally accelerating, so you need to be double, triple, skillful as a policy maker to take advantage of the good things accelerating while keeping the accelerating risks at bay.

The tempo of the projects in primary and middle school education is pretty good. On the one hand, you are pushing for something which is maybe very important, having a completely different approach to assessment that does not have to do with scores on a test and memorizing facts. Even more important, it is a different philosophy of what counts as premium skills. It is a different format with more focus on acquisition of competencies, rather than the score on a test. Pushing for that was the right thing to do.

The other thing is that the old curriculum for primary through high school is what I call, 'an obese curriculum'. It needs to be put on a diet. It has got a lot of fat, and you need to get down to the fiber, with the fiber

being the competencies you need to acquire if you want to be a citizen and you want to be included in society and the labor market. So, this is a great opportunity to change the philosophy of assessment and to put the curriculum on a diet and shake off all that fat.

LH Of course one of the downsides of the projects has been the scale of cheating which turned out to be pretty widespread (see Chapter 6 and Chapter 25 in this volume).

JM Dr. Tarek has been doing the right thing, but what happens? You see a kind of cheating revolution. I was talking to him the other day and he was so angry. He said he was going to fire all the teachers, everybody (laughs). I told him, 'Calm down, calm down. These are civil servants. You cannot fire them'. He was really angry and with good reason. You have to ask how some of the stakeholders in the system react to the changes. Here, we see teachers and school principals not only boycotting the changes in practical terms but pushing for all sorts of cheating or corrupt practices which are on the edge of illegality.

So, I think it is a great example of what we are talking about here which is cultural change. We are not talking about ministerial decrees, regulations, and procedures that we are going to tweak. We are not talking about a choice between TIMSS (Trends in International Mathematics and Science Study) and PISA. We are talking about cultural change, and this is why the work you are doing (with the Education 2.0 Research and Documentation Project) is so important. And Dr. Tarek needs to listen to it carefully because this is the only way we are going to understand what is at stake and how it needs to be handled.

LH Egypt was quick to transition to online learning when schools closed due to the pandemic. The Egyptian Knowledge Bank (EKB) became a hub for resources, a learning management system, and virtual classrooms. Do you have concerns about the pace of digital transformation of education?

JM My concerns are pretty clear. There is nothing that can replace your face-to-face school, classroom, teacher, students, etcetera. There might be advantages and there might be opportunities to this situation. With education technology, there are potential innovations with student assessments. When schooling is online, those kids who are bullied in school, are able to take a break. This is also important. With that said, those opportunities and those good side effects aside, there is nothing that can

replace your primary school, especially for the early years, the KGs, and Grades 1 to 4. Nothing can replace that. All these online on-screen virtual platforms, WhatsApp, et cetera, we have to do it now, and we should keep doing it. But let's make no mistake that this distance remote learning is good for adults, it is not good for children. Those who have been working for open universities and distance universities for many, many years know this is good for adult learning. This is not good for a six-year-old.

Let's face it, there is going to be a huge loss of learning for many students and that learning loss is not going to be distributed equally, no matter how hard we try, no matter how sophisticated the learning platforms, no matter how sophisticated the EKB and any other knowledge banks you can come up with. There is going to be a learning loss, and the losers are going to be the same people who always lose. And it would be absurd to think now, 'This is a great opportunity, we are going to the utopia'. No, no, we are not going to utopia. We are going to dystopia, and this needs to be acknowledged. Now, as long as the dystopia lasts, there are opportunities, and from a very pragmatic point of view you need to grab them. But let's not fool ourselves that this is going to be hunky-dory because it is not. This is going to be a huge blow for our education systems, and the same people who always lose are going to lose big time again. I am sorry to say this, but this is what I believe.

LH In the absence of being able to attend the physical school, are there better ways to manage remote education, especially for more vulnerable members of society?

JM In the core education schooling ages, from five to thirteen or fourteen, there is nothing that can replace your physical school. After that there is more room for maneuver. Mitigation is always pragmatic but it is imperfect. You can have all the sophisticated things with technology, that is fine. Now in that mitigation there are mediating institutions, the family and the school. With the family, the main problem is not the digital gap, though you have that too. What you have is a cultural capital gap and a social capital gap. So, if you are twelve people living in sixty square meters and the parents do not read, these online platforms with messages about how parents should read to their kids before they go to sleep is what we call in Spain here, 'a toast to the sound'. The baseline inequality is exacerbated by the cultural capital gap, and there is really nothing that the Ministry of Education can do about that, certainly not

in the short term. You can provide online support to parents, but if they are not able to take advantage of it, they are going to be left behind.

LH What about the risks for teachers?

JM We see the professional capital gap for teachers. The one thing we have seen so far, and the hard evidence is still forthcoming, but it will come, is that those schools and those teachers who were well organized before the pandemic, who were already using technology, had a common institutional project of what to do, had a vision, the resources, they have quickly adapted to the situation. They have quickly managed to come out with a way forward to keep their students engaged in even more individualized ways than before. But in the school next door, with the same financing and the same hiring procedures, without the vision and a practice of using technology, 20%, 30%, 40% of their students will have vanished. I am calling that a 'professional capital gap'.

If you happen to be a seven-year-old, regardless of how many devices you have or whether or not there is an Internet connection in your home, those are just to begin with but regardless of those, if you have a cultural capital gap in your family and a professional capital gap in your school, this is like Dante's work getting into Hell, no? Lose all hope, lose all hope. I mean even with the many millions Dr. Tarek invested on the Egyptian Knowledge Bank, for that seven-year-old it is not going to make a difference at all. I see this cultural capital gap on the side of the school system, and the professional capital gap as the responsibility of the Ministry of Education, in any country.

LH The position of teachers in Egypt is more complicated because many of them, especially ones who teach in middle school and high school, participate in an 'informal' and rather predatory private lesson market. What is the place of education technology in all of this?

JM Dr. Tarek was so angry not only because of cheating on the projects, but also because of all the online private tutoring schemes that have cropped up lately. He rightly thinks that there is a very large number of teachers in public schools in the country, not a majority but many, who are not recuperable, let's put it that way. They need to be fired because they are just a source of corruption, cheating, and they are sticks in your wheels. These teachers are a liability. The situation is complicated, right? Let's say you could possibly educate 50% of the teachers in a country like

Egypt, which has the population of many small countries combined. But do you think you can fire half of them and the day after, bring another batch of people who are going to be pristine, immaculate, clean, and do the right thing?

Even if it was possible politically to get those people out of the system, the public system where they are protected, how do you replace them? Dr. Tarek thinks 'technology will replace them', but if there is only technology to replace them, be sure that those who have the 'right' family and those who have the right resources, they will make do without schools as a mediating institution. But for those who do not have the 'right' family, who did not choose to be born in the 'wrong' family, then there is no hope here. There is no hope because the technology is not going to be enough, at least not for the time being. So, that is the tremendous dilemma that we have in Egypt right now.

LH In your opinion, how do you think the professional capital gap in Egypt can be addressed?

JM Well, even the Bank finance project has an entire component on Teacher Professional Development and school principals' development.⁷ We have Teachers First and lots of things have been done in the many trainings and professional development for teachers. I am sure that you have a huge capital of good teachers in the country. But it seems that when it comes to the examination system and the assessment system, many of those teachers do not have the motivation to do the right thing. They are not focused on student learning. They are focused on something else, so I think there is a fundamental governance and cultural issue in the country that underlies this situation with the teachers.

I am just brainstorming with myself, but you cannot handpick every teacher in the system. But you should be able to handpick every principal in the system and make sure that you have the right leaders

7 In 'The World Bank Supporting Egypt Education Reform Project' (P157809) Component Two deals with 'effective teachers and education leaders. This component aims to improve the pre-tertiary education effectiveness of teachers, education leaders, and supervisors through two subcomponents: improved quality of continuous professional development (CPD) system; and expanded CPD opportunities' (see <https://projects.worldbank.org/en/projects-operations/project-detail/P157809>).

and then empower those leaders to enable the right teacher teams in the schools. What we are seeing right now is that those schools that were well-organized with a clear vision, with a clear project, and are doing pretty well, had strong principals. They are even able to overcome digital gaps because they find ways around it. This is not something you can do on the systems level, but you can do it at the school level. You can offset those digital gaps if you are organized, and you have a clear vision and a clear project as an institution. That is the way you build up professional capital, by coming up with professional accountability systems. The best example of that is a conduct code, an ethical code for the profession that is enforced, not be a tribunal, but a code by the profession itself with principals, supervisors, mentor teachers, external support sent to the school. Because there are very few things more influential in your behavior than what your peers think of you, right?

LH Can you elaborate on how research can be used in decision-making, particularly in ways that can support greater equity and fairness in education?

JM The first thing we need is data about what teachers and school leaders are doing and how to deal with them. But without the data, quantitative or qualitative, we do not have a vision or a diagnosis of the problems. Then, the inclination is to keep throwing money to the EKB feeling that you are doing the right thing, and you are, but 25%, 30%, 35% are going to be left behind. We have to think not only about the lives of those people, which is the most important thing, but how this translates into human capital accumulation and the wealth and future of the country. And nobody, even in Saudi Arabia with all that oil wealth, is going to save you. Can you afford to throw 30% of your human capital to the trash? You cannot. You cannot. So, we are talking here not only about the survival of those people, but the survival of the country. And we are investing. I was trying to convince my fellow Bank economists that we are not spending money, we are investing in survival. And that is really the most worthwhile investment you can think of. We need to make this case with ministers of finance and others, that we are not just being romantic with this equity talk about all these poor kids being left behind. This is something way harder and more serious than romanticism. This is survival for many countries.

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8. Companion Video

Video 11.1 Juan Manuel Moreno: 'A Life in Education from Academia to the World Bank', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 21 May 2020, YouTube, <https://www.youtube.com/watch?v=fMPQ3xP8OFM>

12. The World Bank's Involvement in Education Reform: Interview with Amira Kazem

*Linda Herrera*¹

Abstract

The World Bank and Egypt's Ministry of Education and Technical Education negotiated a \$500 million loan, 'Supporting Egypt Education Reform Project' (2018-2025) which includes five components around early childhood education, teachers and education leaders, assessment reform, education technology infrastructure and services, project management and communication, and monitoring and evaluation. Amira Kazem, Senior Operations Officer for the Middle East and North Africa at the World Bank, explains the role of the Bank in education sector reform and the process of negotiations and decision-making about a loan. She illustrates different ways she keeps the project on track by organizing institutional capacity building and working with other international providers.

Keywords

assessments, communication, early childhood, loan negotiations, Ministry of Education, sectoral change, Thanaweya Amma, World Bank

1 This interview took place on 2 March 2020 at the World Bank office in Cairo. Many thanks to members of the Education 2.0 Research and Documentation Project team, Abdel Hamid Mahmoud, Heba Shama, and Hany Zayed, who supported this interview with background research, questions, and transcribing.

1. Managing Loan Negotiations

LH As the Team Leader for the World Bank loan ‘Supporting Egypt Education Reform Project,’ what are your main responsibilities?

AK² Typically, in every Bank operation you have one or more team leaders in addition to a Senior Operations Officer and technical and fiduciary specialists. In this project, we have two task team leaders with equivalent ranks: me, the Senior Operations Officer, and Juan Manuel Moreno, Lead Education Specialist.³ Each of us brings different complementary strengths and technical and operational expertise depending on the phase/area of the project. During the project preparation phase for instance, we had a continuous dialogue, especially as we finalized the design document and the World Bank board package. Juan leads the student assessment component, while another colleague leads the component on teachers and educational leaders (and so on for the other components). I lead the project management component that includes monitoring and evaluation (M&E), communications, and other areas. Being the co-Team Leader and the Senior Operations Officer, even when I am not leading a component, I do not leave things to fall through the cracks. I might not take credit for this, and I might not be popular, but part of my role as a team leader is to get things moving and facilitate the achieving of results. Communication among us as a team remains key in this process.

In the end, the project design is developed collectively after extensive discussions and consultations with the Ministry of Education. One important thing to note is that we draft and finalize design documents after reaching common understanding with the Ministry. Other colleagues in management are responsible for quality control and subsequent internal approvals. For example, the night of 23 March 2018 which was a Friday, was particularly important because this was when the Vice President (VP) needed to press the button and sign off on the World Bank’s Board package, otherwise the timeline would have been delayed. I didn’t know why they had not yet been signed, so I called his office to inquire. They

2 Dr. Amira Kazem was the World Bank’s Senior Operations Officer, Education Sector in the Cairo Office from 2012-2025. See Dr. Kazem’s LinkedIn profile for more details, <https://www.linkedin.com/in/dr-amira-kazem-5143468/>

3 See Moreno 2018.

told me that the VP's office wanted to change something in the documents. After a twenty-minute conversation, I was able to do the required changes and resubmit the document. Even though this was a weekend, we were able to push the button at 2:00 a.m. (Cairo time). This is an example of the kinds of things I do; taking responsibility, being proactive, collaborating with my team and colleagues in other teams to get things done, ensuring that the project is on track.

I will give an example from the kindergarten diagnostic study to explain how I manage communications.⁴ As a Team Leader, it is my role to facilitate communications and step in to unblock obstacles to the extent possible. I saw resistance from a member partner about conducting the diagnostic study. I did not understand where this resistance was coming from or why it was happening, so I intervened. I spoke directly with the person to better understand the situation, and told her that if I had known before, I would have cleared the issue sooner. I realized that we had to more clearly communicate that our team was not imposing but helping. We are committed to transparency. In situations like the diagnostic study, we had to reiterate to stakeholders that we were not imposing our views but providing technical support to align with good practice gained from similar activities.

LH This speaks to the unwritten parts of the job. Does this job require someone who understands how to navigate the work culture and bureaucracy in Egypt which has its own logic and specificities ?

AK Not true. It is a matter of mandate. This is how we are profiled, our mandate and our passion. It does not have to do with one's nationality. I worked on Jordan, Yemen, and Iraq, and in all of them, I worked with their interest at heart and with the same level of commitment that I have when working on Egypt. I am not extra loyal to Egypt because I am Egyptian. My loyalty to education surpasses my loyalty to my country or any other country.

LH The question is more about the cultural competence needed to work in Egypt's complex system, rather than loyalty or preference for one country over

4 The KG-component of the 'Supporting Egypt Education Reform Project' was under the leadership of Samira Nikaein Towfighian, World Bank Education Specialist.

another. This country has its own educational history, practices, bureaucratic culture. Is this something that you can speak to?

AK I always struggle with the idea of unique. I do not think that Egypt is unique or that the reform is unique. Yes, the size is different. It is big, with twenty-two million students. Jordan, for example, is much smaller but not much easier, because the resistance is similar. For each project, every time, we still must establish communication and good intentions, trust me. People still ask me, ‘What is in it for you as a Bank and as a World Bank employee?’ Oftentimes, I need to clarify that my salary does not depend on taking certain stands but on getting the job done and done well. I often need to establish that the Bank is here to support.

Currently, Juan deals more with Deena Boraie (Senior Advisor for Assessment, Examination, and Curriculum), given that he leads the related component on student assessment. We at the World Bank operate closely with Habiba Ezz (Director of the Project Coordination Unit, PCU), to carry out our implementation support to the project. For the KG diagnostics, it is quite helpful to have direct communication with the team designated to lead from the MOETE’s side: Nelly Elzayat (Advisor for Early Childhood and Education Policy), Dr. Randa Shaheen (Ministry Consultant, Early Childhood), and you, Linda Herrera (Director of the Education 2.0 Research and Documentation Project). Direct discussions facilitate making progress and make the situation easier when there are no additional steps to move things forward.

LH *You have mentioned the Bank’s role in **supporting** the reform project. People can have the impression that the Bank **imposes** more than it **supports**. How do you respond to this?*

AK I might be going off on a tangent, and I have said this before, but I want to mention here that I am a proud student of Galal Amin.⁵ I am still not over his loss in 2018. I had taken an economic development course with him. Two days after I graduated from Computer Science, I enrolled in a master’s in economics thanks to him. When I received the offer to

5 Galal Amin (1935-2018) was a prominent and award-winning economist and commentator who taught at the American University in Cairo for forty-four years. He was especially known for his critical positions on Egypt’s economic and cultural dependency on the West.

join the Bank he said, 'You are going to get us in trouble! We will have to sell the Suez Canal!' I smiled and left. I had the opportunity to prove him wrong. We offer our clients good support.

LH Could you understand Dr. Galal Amin's reservations about the Bank?

AK The World Bank is an institution with good and bad sides, and the arrangements we enter into with governments depend on negotiations. During negotiations, people are often in a hurry to conclude preparations and rush into implementation. Sometimes they get surprised when the implementation starts, even though it is based on the requirements stated clearly in the loan document. I tell them, 'You chose to sign off. You chose not to actively negotiate'.

LH Have there been renegotiations in the current education loan?

AK No, because we already had many discussions with the Ministry during the preparation stage of the project. The only thing that came out during negotiations was that they wanted to double the amount of the loan. But we told them that we could not just double the loan. It requires a lot of work and revisiting components. This is something that we can get back to later. This is all documented. Another thing that happened has to do with advanced payments, and we processed an exception.

2. Planning for Sectoral Change in Education

LH As someone who has been involved in loan discussions about education reform over many years, can you explain the process?

AK It is crucial to be selective. As Deena Boraie said, 'If we address everything, we achieve nothing'. And I agree with that to an extent because we do not have the capacity or funds to address everything. Regarding the current project, we have been in dialogue to support the Ministry of Education since the time of the Minister of Education Moheb el-Rafei (March-September 2015). In parallel, we had conversations with Dr. Tarek Shawki who at that time was the Secretary General of the Specialized Council for Education and Scientific Research. Before Dr. Tarek, the Ministry's priorities were geared towards school construction

and how to address overcrowding. We said access to school is not the only issue, there is also the issue of quality.

In November 2015, we got a request from the Ministry of International Cooperation (MOIC) to deliver a high-level workshop and develop a sector reform roadmap. During the workshop in April 2016, Dr. Tarek announced his reform vision in the presence of the current Minister. We did not impose anything. He spoke about how the reform would start with kindergarten even though it is not compulsory in Egypt, and the importance of signaling a completely new start (Education 2.0) starting from KG and Grade 1. Other areas he identified for sector reform were a new curriculum and new teacher training. We worked out implementation responsibilities.

LH It seems as if this reform was a long time coming.

AK We knew it was coming, but we did not know if Dr. Tarek would become a minister. He was summoned by the President who essentially announced it in public at the Youth Forum in December 2016.

LH How do you determine if the Ministry and implementing institutions have the know-how and capacity to successfully carry out and maintain the reform project?

AK We provide a critical mass of support such as organized institutional capacity building in the Ministry, in parallel with relying on international providers in the initial phase. The model that happened with the Curriculum Center (Center for Curriculum and Instructional Materials Development, CCIMD) is very interesting. An investment was made to build capacity there, and the MOETE's agency delivered. Similarly, with the National Center for Examination and Educational Evaluation (NCEEE), The Ministry brought in international companies to support local staff with building and developing item-tests, administrating the test, and working with local graders.⁶ The Ministry is likely to consider a similar approach for professional development and this is probably why they are engaged with USAID's Teach for Tomorrow initiative.

6 For more information on these initiatives, see Shawki and Mohamed 2021a and 2021b and Chapter 6 in this volume.

The Minister always acknowledges that there will be mistakes, but it is critical to start the change process.

LH In the new education system, children do not have formal exams until Grade 4. Do you think it is risky to forego the usual formal exams in years 1-3?

AK It is about assessing, not examining. From the Ministry side, Deena Boraie and Nawal Shalaby will tell you that the formative assessments are not always done as planned and there need to be more of them. But the loan project does not support primary assessments, only the Grade 4 assessment for literacy and numeracy.

LH There is also the Grade 9 exam that determines if a student will be sorted into the technical or academic track for high school. It has been criticized for not being standardized or fair. Are there reform solutions for this?

AK Currently, the Grade 9 examination is a high-stakes examination that is administered by the governorates (without coordination between them). This is not a fair exam. The scores are not comparable across years or governorates, and it is not in the interest of the most disadvantaged groups. This Grade 9 examination is a key factor that accounts for the gaps in completion and transition rates between students of lower and higher income levels. For Grade 9, we advised Dr. Tarek to postpone tackling this exam since too many things are already going on (see Chapter 6 in this volume).

3. Changing the Thanaweya Amma

LH The Thanaweya Amma has arguably been the most difficult and controversial part of the education reform project. Even though there seems to be near universal criticism of this exam, it has been exceedingly difficult to change. How does the World Bank factor into the reform of the Thanaweya Amma?

AK Anyone who understands the education system in Egypt understands that you need to start with secondary education and the Thanaweya Amma. As early as 2006, Juan Manuel Moreno was here in Egypt. In about 2008 we had a workshop under the auspices of the then Minister of Investment Mahmoud Mohieddin. It concluded in a meeting with the Prime Minister Ahmed Nazif. There was a public event, and

we made a presentation about changing the Thanaweya Amma, the secondary exit test. This was a recommendation by the World Bank. I will quote Juan Manuel Moreno, who says that the Thanaweya Amma reform is 'the mother of all reforms'. Because if you do not change the incentives at the end of the tunnel, then the reforms will not result in progress in the early grades. This is not our view or his view; there is a convergence of views on this point (see Chapter 11 in this volume).

LH It is interesting that even though discussions to change the Thanaweya Amma exam started years ago, the same problems persist.

AK This was a one-off thing which did not happen again. And Mahmoud Mohieddin was not the Minister of Education, but the Minister of Investment. He led this effort because he realized that education had to change. It came from him and not from the Ministry of Education which is possibly why it did not succeed. Therefore, you need political support and political will, without which the reform cannot move. This is why it is important that the President explicitly supports the education reforms in public events like the Youth Forum.⁷ Without this level of political support, this reform will not sustain and survive. You also need buy-in from the Ministry at different levels of administration like the teachers. You need to get teachers on board by giving them incentives which are not necessarily monetary, but could be recognition, respect. It is about ownership, 'What is in it for me?'

LH What is currently happening with the Thanaweya Amma exam ?

AK There was a ministerial decree by Dr. Tarek to change secondary education to implement a cumulative GPA system, but that was insufficient. Parliament needs to be involved in changing the Education Law. Currently, there are no changes beyond changes in the testing approach with new test items that are structured away from rote learning.

7 The World Youth Forum (WYF) is an annual event that takes place in Egypt's coastal Sinai town Sharm El-Sheikh. It began in November 2017 under the auspices of President Abdel Fathat El Sisi. According to its website, the WYF provides a place 'for youth to engage with top policymakers.... The World Youth Forum is attended by a wide range of participants, including and not limited to heads of states and government, international young leaders, inspiring youth in various fields, prominent international figures and youth groups from around the world.' See the WYF website <https://wyfegypt.com/about-us/>.

The MOETE needs to take a decision regarding the secondary exit system urgently because students entering Grade 10 in September 2020 need to know what is expected of them and whether their assessment will be cumulative or not. If a new system does not go into effect September 2020, the Ministry would need to wait to apply it to the new cohort of Grade 10 students in September 2021 or subsequent years.⁸

LH Is the WB involved in some way in lobbying the parliament to change the Education Law?

AK We do not get involved in changing laws or lobbying, but we reward the MOETE with disbursement linked indicators once the agreed results are achieved and verified by a third independent party.

4. Public Resistance and the Challenge of Communication

LH Communication is included as a component of the reform project. How important is a communication strategy for achieving the goals of the reform?

AK The World Bank loan supports communication. It is a whole sub-component with delayed action. We provided support on a draft strategy for communication (in June 2019), but for reasons I am not aware of, we were asked to close two consultancies supporting strategic communications. We are not bureaucratic, but we say to the Ministry that we are here to support. We include a grievance system in the draft strategy, and we need to work on further developing it and making it public. The Ministry needs to do something to show people that it is listening. When Dr. Tarek became minister, we had this big meeting with subject counselors. At the end of the meeting, they asked if we as the World Bank could pass some message to Dr. Tarek because they did not have a direct communication channel with him. We only conveyed that they wanted to speak to him.

I trust that people still love Dr. Tarek, which comes up in focus groups discussions. They trust him and have an emotional attachment

⁸ Ultimately, parliament did not change the Education Law, and the Minister was not able to implement the Grade Point Average (GPA) system.

to him. They want Dr. Tarek or other high level official that they trust to talk to them about education and the changes. They do not want singers or celebrities to advocate for the reform. We are not saying create something new but bring things together. This is all under Component 5.2 which we are very passionate about. It was very rewarding when the communication strategy was developed and very disappointing when it was put on hold. This is how serious we are about communication.

LH Many aspects of this reform have been met with resistance, as seen on social media, in the press, and other places. Were you expecting this?

AK We all expected resistance, but we supported communications early on. We had manuals from as early as July 2018, on how to handle procedures. We communicated on the TORs (Terms of Reference) of the PCU early on hoping they would come in, which they did a little later. We had communications about how people should deal with this. The loan was effective August 2018, so we wanted to give them cushioning. I was hoping we would have more and different communications. Resistance is not surprising, but the lack of a more comprehensive, targeted communication is a little surprising.

LH What else has surprised you about the reform process?

AK Let us talk about the positives. I am impressed with the graders/markers. This was the first pleasant surprise. When I checked the first dry run of the Arabic and English exams, I was also very impressed with the quality of item-test/questions and the effort that went into administering the testing process (for Grade 10 in 2018/2019). The evident positives are the quality of questions, graders, and posting and reporting of results. For KG, teachers need more training. We need to train them differently. This KG diagnostic study is important to get things moving forward. I am very hopeful that after the KG diagnostic study, more relevant training will be provided to teachers.⁹

⁹ See an analysis from the KG diagnostic study by Krafft et al. 2023.

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13. Redesigning the Curriculum for the Twenty-First Century: Interview with Nawal Shalaby

*Linda Herrera*¹

Abstract

The Education 2.0 reform represented the largest leap in curriculum development since the establishment of the Center for Curriculum and Instructional Materials Development Center (CCIMD) in 1989. Its director Dr. Nawal Shalaby, led efforts with her team to draft new curriculum frameworks and oversee the production of the new books. They worked with representatives from private textbooks companies and UNICEF, among other experts. She talks about the history of curriculum development in Egypt, the necessity for more teacher training and preparation at the faculties of education, and the need for effective monitoring to know if and how the objectives of Education 2.0 are being realized on the ground.

Keywords

citizenship education, curriculum development, curriculum framework, life skills, private sector, textbook production, UNICEF

1 This interview was conducted by Linda Herrera in Arabic at the CCIMD office in Cairo on 18 February 2020. Thanks to Nairy AbdelShafy for filming the interview and to members of the Education 2.0 Research and Documentation Project for translating and transcribing it. To see five video excerpts from this interview, see the EDU 2.0 YouTube Channel, <https://www.youtube.com/@education2-Egypt/videos>

1. The Origins of Education 2.0

LH When was the first time you heard that the Ministry of Education wanted to develop a new education system called 'Education 2.0'?

NS² The first time I heard about it was from Dr. Tarek, after he was appointed Minister of Education in February of 2017. He was talking about his dream of revising education in Egypt and moving our system out of what he calls 'Education 1.0', and into 'Education 2.0'. At the time, I was the head of the Curriculum Development Research Division at the National Center for Educational Research and Development (NCERD) and not yet the Director of CCIMD (Center for Curriculum and Instructional Materials Development). Our group met Dr. Tarek in a meeting where he explained the idea in more detail.

LH What was your initial reaction?

NS I felt it was a beautiful but difficult dream because our circumstances are very challenging. Take the physical environment in schools; we have large classroom sizes and a shortage of teachers. We would also have to train all the teachers. Even now, after making big strides on the ground, all those difficulties weaken the results we want to achieve. I thought that we didn't have adequate tools to make the transition to Education 2.0 in the way we wanted.

LH Prior to the start of the 2.0 reform, what kinds of curriculum work were you engaged in at NCERD?

NS As I said, I had recently become the head of the Curriculum Development Research Division at NCERD. All our research was about developing the old 1.0 system, not making a transition to a new system. In 2017, we were deep in discussions about twenty-first century skills. We did a series of research studies which included some modeling around how twenty-first-century skills could be included in

2 Dr. Nawal Shalaby received her PhD in Science Education from Alexandria University and was a full professor at the National Center for Educational Research and Development (NCERD) prior to serving at the Director of the Center for Curriculum and Instructional Materials Development (CCIMD). For more details see her LinkedIn profile at <https://www.linkedin.com/in/dr-nawal-shalaby-6bb036a6/>

the curricula. We came up with a proposal with policy suggestions, but it was not implemented. These were just research findings. We designed some teacher training modules on these skills, but we were not working towards this big transition. I also worked previously on developing curricula and writing books here with the Center, but it was all about 1.0, not this big shift we are seeing now.

LH What are the main differences between EDU 1.0 and EDU 2.0 from the point of view of the curriculum?

NS In terms of curriculum, we had been trying to incorporate twenty-first century skills and values, but these were not a major part of the 1.0 curriculum. They would become central to the 2.0 curriculum. The old textbooks had sections on skills in a marginal way, in boxes outside of the main text. We used to talk a lot about developing critical thinking skills, but this was not a main or organic part of the curriculum. It was organic to the 2.0 curriculum. In 1.0 we trained the teachers on scientific content, rather than on the teaching methodology and skills' development. We did not tell them how to nurture students' skills and achieve results in class. As you can see, there is a big difference between 1.0 and 2.0 when it comes to the curriculum.

LH Can you give examples of the types of twenty-first century skills being integrated in the new curriculum?

NS We are teaching them how to express themselves, how to write about themselves, how to describe themselves. For example, we have an activity for the student to write their own CV. Students in primary learn how to sit for an interview and write a CV, the book has a template for this. This will help them later when they apply for jobs. They will not have to take a separate professional development course later on. We give students the basics to be able to achieve their professional dreams. Our goal is to build the character of someone capable of living in the twenty-first century, capable of facing twenty-first-century problems that we don't even know about yet. They will live in an age that is not ours, so we are trying to equip them with skills for the future. Countries throughout the Arab states and all around the world are working on these issues. They are working on building a personality, on nurturing skills and values. We are working heavily on building the Egyptian character (see Fig. 13.1).



Fig. 13.1 A lesson from the Grade 1 Arabic textbook about a girl who dreams of being an explorer. Ministry of Education and Technical Education, 2021, pp. 145 and 151.

2. Developing New Curriculum Frameworks

LH I understand that in the beginning, Dr. Tarek told his advisory team to come up with ideas starting from a blank page, without worrying yet about on-the-ground realities. What were some things you wanted to see implemented in the education system?

NS Yes, that is true. It was 2017, and the dream was to prepare and equip the learner for 2030. We thought about what we wanted the graduate of 2030 to look like. And yes, we—the Minister, his advisors, and members of my team—actually started from a blank page. We sat on that table (points to a long table in her office) and looked together at a number of studies, research, and frameworks from different countries. We were especially interested in those with high rankings in education like Singapore, Malaysia, Europe, and the US. We started to see what those countries wanted their kids to be like and compared that with what we wanted ours to be like. We took both global and national factors into consideration. We identified a group of traits we wanted for our students to possess. We agreed that they should be thinkers, creative, innovative, and continuous learners, able to be competitive internationally, while believing in values, our heritage, and our country. We wanted them to have a strong work ethic and to understand entrepreneurial skills and concepts. These goals led us to a long and extensive process.

LH How did you go from identifying features you wanted for the graduates of 2030, to developing concrete curriculum frameworks?

NS We started by asking if we could reach those twenty-first century characteristics through a traditional curriculum. Of course, we came to the conclusion that it was impossible. So, we started researching other curriculum models that integrate these skills. While we were doing this search, something just came to us. It seemed like a coincidence, but it was not really because when you seek, this can happen. At this time, UNICEF was preparing to launch a global initiative for Life Skills and Citizenship Education (LSCE). UNICEF invited the Ministry and CCIMD to discuss it with them before their launch conference in Amman, Jordan. We went and addressed a few questions as Egypt. We mentioned that we were very interested in twenty-first century skills, but

we had the challenge of how to integrate them into the curricula so that they would become a reality in the classroom. We lacked experience in this area. And it is not wrong to admit when you lack experience. When we returned from the launch conference, we sat together to discuss how we could adopt UNICEF's 12 Life Skills Framework. We decided to add two very important skills for our context in Egypt: 'productivity' and 'accountability'. So, we modified the UNICEF framework and decided on fourteen instead of twelve Life Skills. That was the first thing. The second thing was that we needed these Life Skills to build the student's character and value system. For that, we Egyptians had to come together to put down the values that our society needs now and in the future. (see Chapter 7 and Chapter 10 in this volume).

Third, we decided to put together a general framework that includes our approach to educational thought and philosophy from KG to Grade 12. This framework addresses the major challenges and issues our learners would likely face locally and globally until 2030. We mapped all the different issues and grouped them into five main categories: Health and Population; the Environment; Globalization; Non-Discrimination; and Citizenship. This became the framework of 'issues' to be incorporated in the curricula from KG to the end of high school in Grade 12.

We wanted to be very intentional about the curriculum. We at CCIMD had struggled over the years with ad-hoc additions to the curriculum. Even after finalizing a curricula, different ministries and civil society groups would ask us to add things to it. For example, they wanted us to fit in a lesson about overpopulation, reproductive health, women's rights, smoking, child's rights, et cetera. When these new topics were added to the textbooks, they would lose cohesion. So, from the beginning, we included all the key themes and topics to avoid this problem.

LH Why did you decide to adopt a multidisciplinary approach for KG-Grade 3?

NS We decided early on that the multidisciplinary approach, or the thematic approach, is the most suitable for the early years. We agreed on four main themes: Who am I?; The world around me; How does the world work?; and Communication. In the multidisciplinary books there are basic concepts from science, math, social studies, vocational or career skills, and the arts. This was the first time that the arts and

professional skills were incorporated into the curriculum. We developed a set of learning outcomes which guided us. We did not want to teach about skills in a superficial way, but in a way that would teach values and really address the issues.

We found that even though the multidisciplinary curriculum includes language and mathematics, we needed to open 'windows' for language and mathematical foundational skills. We made an 'Arabic Window' and a 'Mathematics Window'. These are specialized areas with specific time in the classroom. Even though they are separate, they are completely related to the multidisciplinary curriculum. For instance, in the 'Arabic Window' we teach the child letters and words. In the 'Mathematics Window' we teach counting, addition, and subtraction. When the child enters the multidisciplinary class to practice these skills, they have activities like buying and selling. So here, the student uses both numbers and words. The themes of the multidisciplinary curriculum are even present in religious studies and physical education.

LH Can you give examples of how you applied the multidisciplinary approach to the subject of religion, whether Christianity or Islam?

NS For example, the Christian Religion book is parallel to the Islamic Religion book. If we put them next to each other, we will find that they follow the same themes, starting with 'Who am I?'. We will also find the same activities. The only difference is that one book pertains to Islam and the other to Christianity. Those books are founded on a common and agreed upon set of values. We told the publisher who created the books that in the section 'Who am I?' we want to nurture values of cleanliness, order, and respecting others. For example, in the religion book for Islam we asked for all the Hadiths (saying of the Prophet Mohamed), Quranic verses, and practices of the Prophet that nurture those values. The same goes for Christianity. It is the first time that the books for Islam and Christianity were created from one company, Nahdet Misr. They have two teams working side by side in parallel, agreeing with each other about what to include from the Quran and what to include from the Bible (see Chapter 15 in this volume). We also use project-based and play-based activities so that pupils can learn more about who they are, what is special about them,

their relationship with the people and the world around them. This really was the first time for this to happen through Grade 3.

3. Building Professional Capacity at the Curriculum Center

LH This curriculum reform was based on a different methodology and pedagogic approach. Your staff at CCIMD had expertise in the old system, Education 1.0. How did they gain the proficiency to lead the work on the new 2.0 approach?

NS We had a challenge in terms of the curriculum work. Back when we started, we were only thirty people. Now, we are around fifty. The work being done needed 120 people. We have a team of what I will call 'curricula practitioners'. They have twenty to twenty-five years of experience. But we did not have the experience of knowing how all these curricular changes could become a reality in the classroom. To be honest, we suffered a lot in the beginning and had a lot of problems. We started by telling the colleagues that we would be working on this big transition, that we were no longer interested in rote learning and memorization. Some individuals were afraid and were clinging to the past. They were attached to the old conservative ideas, especially learning through memorization. But we constantly tried to support and help them. There has been a big change in the past three years.

For example, we had huge fights when we were discussing the multidisciplinary approach. Our subject experts in mathematics, Arabic, and science wanted to assert themselves and stick to individual subjects in the curriculum. We had scenes of fighting and crying. Every team wanted to get the lion's share of the book and activities. We took a lot of time to explain that our goal was to produce one learner with appropriate doses of each subject, and that these were connected to the learning outcomes. To achieve the outcomes, we had to build on criteria and indicators. We combined some things and got rid of others. The team started to understand that the issue was about cooperation, not competition. The second thing was fear. They were very afraid.

LH What were members of your team afraid of?

NS They were afraid that the experiment would fail, that CCIMD would be the victim of a failed experiment and that it would be sacrificed. Previous ministers had shut down the Center. One of my colleagues said: 'Why would you put us facing the cannon? Why us?' They also said things to the effect that Dr. Tarek's ideas seemed like a fantasy. They asked why we should be the ones to implement them. They asked if other Arab countries had done this before. They asked why we had to build something new? Why could we not just improve the current system? One person who used to say all these things, adamantly defends the new system today. They started changing their attitudes after getting heavily involved in the actual work. Today, when anyone in the Center talks about the 2.0 curricula, it is as if they are talking about their children that they created. I am honestly very happy about the change that happened.

LH Did your staff undergo any kind of professional development trainings? How did they learn about working on a different approach to the curriculum?

NS We studied and searched a lot for how to do this. And again, we resorted to UNICEF which had similar experiences in other countries. We, on behalf of the Ministry of Education, asked UNICEF to help to build the capacities of CCIMD in this field. Over three months, we conducted several workshops with the CCIMD staff about how to incorporate skills, values, and other issues into the Egyptian curricula, starting from KG. We wanted to make sure that these issues entered the classroom through the teacher.

LH How did you run these workshops with UNICEF?

NS I will tell you about something I did to get them to be really involved in the work. We had a workshop here to build capacity in the new curriculum. It was one of the first workshops. Even the Minister Tarek Shawki was skeptical about whether we could be ready for the start of the school year in 2018. We had under a year to finish our work. I invited the Minister to attend the workshop without telling the team. He not only came, but he stayed, and this brought a lot of positive energy. I told them, 'You are now working on a new educational system. Dr.

Tarek wants the books on the desks in schools by September 2018'. I said, whoever agrees to work towards this goal should raise their hand. I was met with massive clapping in the hall. Even the Minister said that this workshop had tons of positive energy. I found them all clapping and promising that the kids will find the books for the new educational system in September. This is one of the things that makes me really proud. We passed great days during this period, even with all the suffering we had to go through. We got home very late. We barely saw our children. It was hard.

4. Working under Pressure

LH You had to work under enormous time pressure to finish the curriculum frameworks and books for KG1, KG2, and Grade 1 in time for the start of school year in September (2018). How did you handle this?

NS Yes, and Dr. Tarek knew very well that we needed, and still need, a staff of 120. We were working three shifts. We worked in the morning, we worked midday, and sometimes we would go home at midnight or 1:00 in the morning. And some days in Ramadan we would have suhoor (the pre-dawn meal) here in the office. There was no other way we could do it. We believed in this and took responsibility for the work. We had to do everything right.

LH Did you find a difference between how, for example, older or younger colleagues in your team worked under this pressure?

NS No, there were no differences of this sort. But sometimes in the work there were problems with women to be honest. I am not sure if this is relevant or not, but their husbands caused us problems (laughs). For example, one time we were at a workshop and our colleague, a female chemist, was doing an important presentation. She was in the middle of explaining something when her phone rang. It was her husband, complaining that she was late. She excused herself and said 'Dr. Nawal, if I do not go home now my husband will divorce me!' So, I told her 'No, get divorced. Divorce is good' (laughs).

LH Is she still married?

NS Yes, thank God (laughs). Many times, we would have to call the fathers of unmarried female colleagues and tell them, 'Please do not worry, they are with us'. We would drive them to their homes after work at night because sometimes we would finish at 1:00 a.m. Honestly, we faced many of those problems.

LH How did the long hours and pressures of the work personally affect you? I know your family is in Alexandria and you stay in Cairo during the work week.

NS Yes, I am from Alexandria, but God takes care of these things. My daughter is older now and can manage her life, and I am happy and proud of this. She is very excited about the new curricula, really. Sometimes when I get tired, I tell her I can stop and someone else can continue in my place. She says, 'Never! Do not ever leave this experience until it is firmly in place. Do not leave your work until you feel that you have built a good and sustainable structure'. Of course, this has taken a toll on me. I do not see my daughter and mother as much as I used to, just once every fifteen days. And yes, work affected my life a bit, but my life does not affect my work, thank God.

LH Were you able to finish the new books in time for the start of the school year in 2018?

NS We began in August 2017 and in September 2018 we finished the curriculum framework with educational outcomes for all subjects. The Ministry was training teachers (with Teacher's First). The Ministry used different companies to create the educational materials for KG and Grade 1. In fact, we received great feedback from those local, Arab, and multinational companies. They confirmed that our frameworks were on par with international standards. Thank God I have a great team, great in intellect and effort. They all have an honorable history (see Fig. 13.2).



Fig. 13.2 A UNICEF function to celebrate the achievements of the Ministry of Education and Technical Education and the Center of Curriculum and Instructional Materials Development (CCIMD) in support of Education 2.0. From left: UNICEF Representative in Egypt Bruno Maes, Minister of Education Tarek Shawki, Director of CCIMD Nawal Shalaby, 12 May 2019. Wikimedia Commons, CC BY-SA 3.0, https://commons.wikimedia.org/wiki/File:UNICEF-TarekShawki-Nawal_Shalaby.tif#/media/File:UNICEF-TarekShawki-Nawal_Shalaby.tif

5. History of the Curriculum Center

LH What is the history of the Center? How long has it been overseeing curricula and textbook development in Egypt?

NS We can talk about curricula in Egypt before the Center in 1989, and after. Before 1989, we would get a group of people who would sit and create a schoolbook, without goals, without learning outcomes, without anything. After 1989, the curriculum in Egypt was based on scientific methods. This started with the arrival of a new director named Kawthar Kojak who propelled this center forward. I really loved this woman. This was the first time that there was a specialized center in Egypt for curricula. I came to the curriculum center after I finished my Ph.D. I was employed at the NCERD, so I worked here on secondment. This is where

I learned how to deal with curricula in a professional way. From early on, Dr. Kojak was concerned with building our professional capacities. I am one of the people whose capacities she built in this center.

She would bring us foreign experts. Back then, there was a project from USAID for developing primary curricula and I worked on that project. There were really good people here, big names, names that we had only read in books. I still remember there was David Butts, Professor of Curricula and Teaching Methods of Science (1973, 1974). He used to come and sit with me specifically and discuss astronomy concepts so that I could see how to integrate them into the curriculum. It was really great.

In 1990, Dr. Kawthar got the director of Macmillan to stay here for six months to teach only one person how to be a textbook editor. And that person was me. Yes, they picked me. But we would hold workshops about how to edit textbooks with the whole team who would listen, comment on, and discuss the process. We would roleplay. I would be a creator working on a specific topic, and he would be an editor. I still remember when we worked on the topic of pollution. This was one of the best periods in my professional career. After that, I became an editor of textbooks. I remember a beautiful sentence Dr. Kawthar used to say about me, 'This girl', she would always call me girl, 'This girl's pen is like gold'.

God bless her soul, a beautiful lady. I was really sad when she passed away around two years ago. We all knew she was nearing the end of her life. I told her, 'Dr. Kawthar, you know that I love you.' She said, 'Yes, I know you love me'. In truth, this woman not only had an impact on me, but on everyone in the Center. Honestly, if you talk to the people here who were present during her time, they will all say they were affected by Dr. Kawthar. She was strong academically and managerially. Before her, the curriculum was done in a random way. But afterwards, it became a methodology, a scientific method. We experienced the second leap with Education 2.0 in 2017. I think those are two important milestones in the history of curricula in Egypt. Honestly, I am never tired of talking about work.

6. Working with Private Sector Partners

LH *The Ministry brought in private publishing companies to work with the CCIMD to produce the new 2.0 books. How did you manage the relationship and workflow between your team and the private companies?*

NS Managing our work with the companies was not easy. This was the first time that our books were created in this way, by working with different partners like Discovery Education, Nahdet Misr, and York Press. In the old system, we would decide on and write up the educational outcomes. Then, there would be a tender. Three or four companies would present a model book to the Ministry, and it would be evaluated by an independent team. The textbook with the highest marks would win. They would bring it to us, and we would make general comments, but it was already printed so we could not make changes. Now we work differently.

LH What is the process now?

NS What happens is we give our educational outcomes to the company. Discovery is the company that created the multidisciplinary book 'Discover', Nahdet Misr created the Arabic and Religion books, and York Press did the English books 'Connect' and 'Connect Plus'. We did the mathematics book here and we worked on the Teacher's Guides.

The process is that the publisher creates a sample of the book and sends it to us. We revise it based on the framework and the Egyptian context, especially if the company is not Egyptian. Besides the scientific accuracy of the books, we check the Egyptian language and Egyptian culture. This revising was something totally new for us, and we would revise as a team. We would come here in the main room, put the book on the data show, and read it together. For example, we revised the Arabic textbook with a team of different subject specialists. We had someone from Arabic, science, mathematics, psychology, all the specialties. They would read the text together, discuss it, and reach a decision about what needs to change, or what needs to be added. This was the first step. We created a smaller team to check the revisions. This might go for two or more rounds until we were satisfied.

In the beginning, some of the companies resisted revising the books and would not make the changes we requested. We had to insist. We had the strong support of Dr. Tarek, so working with companies went well because we established rules, and they would respect those rules and most of them would accept our requests for changes. In the end, when the final product would come out, we would all be proud of it.

LH How are the 2.0 books different from the older 1.0 books, whether in terms of content or form?

NS They are different not only in appearance, but in quality. This is the first time the books get children to express themselves like this. The student is supposed to talk about himself or herself. The books also emphasize self-evaluation. For example, a lesson would ask the student to evaluate, 'Do I have good handwriting, correct dictation, appropriate words?' We incorporate this idea of self-evaluation in many lessons. Another example is the 'Discover' book that has an Arabic Window and a Math Window. In the book for the Arabic language, we did not work with teaching the letters of the alphabet in sequence but according to the common words used by the child in her life. My colleagues here in the Arabic section are responsible for this idea.

7. Explaining Education 2.0 to Parents and Teachers

LH Education 2.0 is significantly different from the system of 1.0. How have you communicated this difference to parents?

NS We started by explaining that we have a new system with a new group of books for KG to Grade 3 (as of 2020). Mothers, especially young mothers, were worried about their kids not memorizing. They were used to their kids memorizing ABCs and numbers and writing down new information a hundred times. I can understand their concern because this is how we learned. I always tell them that this was good for a different time in the past, but now, the whole world is working on skills. We cannot still tell our kids to memorize the concepts and write them down when they do not have skills.

LH How did parents react to the new emphasis on activity and play-based learning?

NS We received some opposition from parents. But we always tried to reassure them that even though their kids are playing, they are also acquiring skills. They are learning communication and cooperation skills to respect others around them.

LH What about the teachers? How do you explain the new approach to them?

NS We emphasize that what is being taught in kindergartens would be repeated again in Grade 1 because the KG stage is not compulsory. It is as if those five years (KG1, KG1, Grade 1, Grade 2, Grade 3) have become one stage. In fact, the book that represents the most important part of the reform is the multidisciplinary book, known as the ‘package book.’ The book is a package because it combines a number of subjects from KG till the end of Grade 3 and integrates activities in a great way (see Fig. 13.3). You have concepts from math, science, social studies, vocational studies, and art. The book contains only activities and blank pages where the child can express himself/herself, sometimes by writing, other times through drawing, or conversation. The learner’s book does not contain information about basic skills, but these are in the Teacher’s Guide.



Fig. 13.3 Ministry of Education and Technical Education, 2018/2019, multidisciplinary books, ‘Discover’ for Grade 1.

LH *Is the Teacher’s Guide something new?*

NS We have had teacher’s guides before, but this is the first time in Egypt to print the guide for all teachers. In fact, this was very expensive, but the Ministry took care of it because they believed it was important. The guide is color coded and explains what to do from the moment you say, ‘good morning’ until you are done for the day. It also indicates how much time to

spend on an activity, which is 45 or 90 minutes. We also give teachers space to innovate and try out new ideas. In the guide, the headlines in red are the most frequent. The Teacher's Guide is made masterfully, and perhaps we will not have to revise it for many years to come.

LH How are teachers being trained in this new system?

NS One of the challenges in applying the new curriculum is the teacher. Of course, we all know that even with the biggest efforts on our side, ultimately there is a teacher on the ground who will apply this. And if teachers do not believe in what they are doing and are not sufficiently trained, we will not reach our goals. When we created the curriculum framework, we had an addendum called, 'Teacher Training Framework' that shows how to relay this concept to teachers.

In 2018 before the start of the year with the new curricula, all teachers had an intensive training for three days. They learned about the skills, the values, the issues, and the teaching strategies. We trained teachers from KG 1 to Grade 3 together so that they would get used to the new system. All teachers got training for this five-year stage. Before they received the Teacher's Guide, they would ask a lot of questions about what to do with the books. I would tell them to consult a hardcopy of the guide or a digital copy on the Egyptian Knowledge Bank (EKB). Many teachers said that the guide made a huge difference.

During the first term there was also a one-day training. We followed a system called 'cascade' which starts with trainers training the teachers, who then go on to train other teachers in the governorates. This also happened in the second term and again in 2019. Is this enough to achieve what we need? Definitely not. We are dealing with the legacy of decades of practice based on memorization, recitation, and lecturing which is completely different from what we are doing today. We really need time to reach our goals.

LH What is the role of faculties of education in Education 2.0?

NS This is a very important point. We need to cooperate with faculties of education, and we have only recently begun to work on this. Until now, the plans are still on paper. We are currently talking to the dean of Ain Shams University and are making short- and long-term plans. I care more about the long-term plan in which we would supply the universities

with documents about Education 2.0 so that they would integrate them into their curricula for teacher preparation. They will start with third- and fourth-year students, and then students from all four years. Actually, this is the dream, that the 2.0 curricula and frameworks would be part of teacher preparation. So, even though we have the short intense trainings, this will not achieve 100% of the expected results. Faculties of education should provide us with teachers. Teachers are supposed to be ready as soon as they graduate. When faculties of education supply us with teachers aware of the new educational system and the new curricula, this will be a big achievement and save the Ministry a lot. This will ease up the trainings because it is not the Ministry's job to train teachers.³

8. Building Evidence and Planning for The Future

LH What kind of evidence do you need from the ground to understand if the new system is working, or how to improve it?

NS We really want to know if students are developing their skills. We would want to know the percentage of classes that are really teaching our curricula the way we intended it to be taught. Do teachers actually leave students in class to do individual, pair, and group activities to improve their skills? Do they let them express themselves in the ways we instruct them in the Teacher's Guide? What happens when it comes to practice? The second thing is, assuming the classroom practices are changing, are they achieving results? Because if they are not, then we need to revise our frameworks and revise the books. If the teacher is teaching well and the students' skills are not improving, then we need to revise our methods.

3 In April 2022, in consultation with the government of Egypt, USAID launched the Teacher Excellence Initiative (TEI) with the Education Development Center, Inc. serving as the Implementing Partner. According to the USAID website, 'This activity improves the quality and relevance of teacher preparation in Egyptian public universities so that current and future primary school teachers have the skills to increase student learning and advance the Education 2.0 reform. The Initiative worked to establish undergraduate and graduate degree programs for primary-grade teachers at fifteen Egyptian public universities' (<https://web.archive.org/web/20250116142420/https://www.usaid.gov/egypt/basic-education>). The project was closed in February 2025 as the result of the broad cuts to USAID by the Trump administration.

We also want to know about the teacher. Is she happy with what is happening, or does she consider it a burden? What does she think about the teaching methods and the overall change? Are teachers using the new evaluation system? Those are some of the things we want to know.

LH Some people are concerned that if the Minister changes, the Education 2.0 system might be replaced with something different. How can you mitigate against this?

NS Of course, it is likely that everyone working on 2.0 will leave and be replaced. But will this change the system and make someone start something new? In theory, no. Why not? Because the educational reform happening is not the vision of the CCIMD or the Minister alone. This is the direction of the state. And by the way, we had other visions, but they were not implemented because the state was not supporting them. We have an approved general curriculum framework for KG-Grade 12 and the state supports this direction of Education 2.0 politically and financially, so I think it has to continue. But there are risks, of course. What if a future minister does not want to continue this? What if he is not following this line of thought? Of course, the risks are there, but there are factors for sustainability. We are talking about political will, about written documents and commitments. So, whoever comes next will find everything ready and merely apply it.⁴

I want to say that I am so proud that I am a part of this, really. Sometimes I tell Dr. Tarek, and I want to say this in a public event, that the Minister always thanks us in all the events he attends. He always says that the CCIMD is doing this and that, but we do not get a chance to say the truth and to thank him. Because the CCIMD has been wanting to make leaps in the curricula for years, but we have not found the support to achieve those visions. In truth, this ministry and this period is very prosperous. It has given us a chance to achieve things we wanted to achieve for a long time. So, we should be thanking him.

⁴ During a change of cabinet in 2022, Tarek Shawki was replaced as minister of education. The books had been completed to Grade 6 only with the Grade 7 book in process. The new minister Dr. Reda Hegazy continued the Education 2.0 General Framework, but with modifications.

9. Education 2.0 Resources

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11. Companion Videos

Video 13.1 Dr. Nawal Shalaby: 'The Beginning of the Education 2.0 Reform in Egypt', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 18 February 2020, YouTube, <https://www.youtube.com/watch?v=1AXJGhHCiH4>

Video 13.2 Dr. Nawal Shalaby: 'The Role of Egypt's Curriculum Center in the Education Reform', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 18 February 2020, YouTube, <https://www.youtube.com/watch?v=Hhw-TIjxZG4>

Video 13.3 Dr. Nawal Shalaby: 'Teachers in Egypt's New Education System', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 18 February 2020, YouTube, <https://www.youtube.com/watch?v=DeLwFln0V-I>

Video 13.4 Dr. Nawal Shalaby: 'The New Textbooks for Egypt's Education 2.0 Reform', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 18 February 2020, YouTube, <https://www.youtube.com/watch?v=n54joWc2yFc>

Video 13.5 Dr. Nawal Shalaby: 'The Future of Education Reform in Egypt: Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 18 February 2020, YouTube, https://www.youtube.com/watch?v=R_BNDjsW4kQ

14. Discovery Education and Private Sector Partnerships: Interview with Emily Waters

Ebtehal Elghamrawy and Linda Herrera¹

Abstract

When the Education 2.0 reform was initiated in 2017, Discovery Education worked as a partner with the Ministry of Education and Technical Education for textbooks, Teacher's Guides, digital content, and teacher professional development. Emily Waters was involved at all stages of the work. She describes the fast-paced reform efforts to build teams with Egyptian counterparts and deliver books. During the COVID-19 pandemic, her team also supported the Ministry with online and blended learning solutions. She reflects on the challenges, and how being involved in such an historic reform brought her a sense of purpose and a deep appreciation for her Egyptian colleagues.

Keywords

blended learning, curriculum development, digital resources, discovery education, early childhood, interdisciplinary, multidisciplinary, professional development

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- 1 The interview took place on 7 December 2020 via Zoom. This interview was done as part of an education research training and collaboration between the Education 2.0 Research and Documentation Project led by Linda Herrera, and a group of MEd students in 2020 from the Harvard Graduate School of Education (HGSE). That group included Nariman Moustafa, Ebtehal Elghamrawy, Claire Hao, and Katherine King.

1. A Career at Discovery Education

EE How did you get involved with the company Discovery Education?

EW² I have been with Discovery Education since 2009. It is the first job I got straight out of university. I was working in the Silver Spring, Maryland office as their customer support team member. I fell in love with the company, especially the mission and vision of having digital resources in the classroom to help students learn. I had multiple positions within Discovery as I was trying to find my area of interest. I worked on their content team but felt it was more of an individual role, and I like working with people. I switched over to our textbook team which launched the first digital textbook in the US. We were working with school districts across the country to implement digital resources and help Professional Development (PD) specialists, teachers, curriculum departments, parents and students learn how to use digital resources. I was in that position for a couple years when my husband who was born in Ethiopia and raised in the US, found an opportunity to work and live in Ethiopia. We moved across the pond, if you will, to Africa, and I had to leave Discovery. I was really nervous about not having any work or finding career opportunities in Ethiopia.

EE When did you become involved with the education reform work in Egypt? Did that happen after you moved to Ethiopia?

EW In November 2015, the company signed a deal with the Specialized Presidential Council for Education and Scientific Research for the Egyptian Knowledge Bank (EKB) (launched in January 2016). The leadership team at Discovery Education reached out to me to be project manager on that project. I was on the content team responsible for finding and creating content for the EKB. I had also worked with our professional development teams in the US and knew a lot of the people that we were pulling together to work on the EKB. I was living

2 Emily Waters serves as International Senior Project Director (2019 to present as of 2025) at Discovery Education International. See her LinkedIn profile for more information: <https://www.linkedin.com/in/emily-waters>.

in Ethiopia, which is the same time zone as Egypt, so it was a good fit. I was really excited about the role.³

Since then, we have grown from basically a team of two people to currently a team of twenty in the international offices, with forty-five local team members in Egypt. Thanks to the success of the Egypt project, we have expanded into several other countries across the world, and our reach is way beyond where we were five or six years ago. That is a little bit about the history of my career at Discovery and how I became involved in Egypt. I am very fortunate and very thankful. The stars aligned, especially with my career, so it has been great.

2. Providing Content for the Egyptian Knowledge Bank

EE The EKB started with serving university students and post-graduate researchers. It later expanded to include KG to Grade 12. Can you describe Discovery Education's contribution to the K-12 portal of the EKB?

EW The Egyptian Knowledge Bank is the world's largest digital library. I have never seen anything like it. It pulls together world-class publishers and content from around the world to provide access to information and learning materials for the whole country. Every citizen can have access to it. The research departments at universities or just anyone who has a love for learning can access books, resources, and other materials. Our special area was for K-12. The presidential Specialized Councils (overseeing the EKB) needed to have publishers that addressed the schools, the students, teachers, and parents. We did a lot of focus groups and interviews with teachers and made many school visits to understand how these resources were going to be used. We found that teachers were only going to use resources that aligned to the national curriculum and were approved by the Ministry.

3 See the Discovery Education website page about the Egyptian Knowledge Bank. It states that 'In late 2015, Discovery Education was selected by the government of Egypt as a primary partner for providing dynamic Science, Technology, Engineering, and Maths (STEM) focused educational media content to the Egyptian Knowledge Bank (EKB) for primary, preparatory and secondary school students and teachers. [...] Available to 23 million teachers and students, the Discovery Education – EKB partnership spans across the whole of Egypt' (<https://web.archive.org/web/20171020014034/http://en.discoveryeducation.ekb.eg/about>).

We have been providing content for the K-12 students and teachers in three different forms. The first is a searchable database of content. There are currently about 14,000 English assets and 14,000 Arabic assets making for 28,000 resources total across K-12 science and math. The second is WebEd TV for streaming. This is an extracurricular resource for students, teachers, and parents to use in the areas of science, math, STEM (Science, Technology, Engineering, and Mathematics), career skills, and world topics. It generates three hours of content a day, five days a week, released one hour at a time for each of the grade ranges (primary, middle school, and high school). We release that content every school day of the year, hoping that teachers and students can access it in the classroom for science and Math lessons, or outside the classroom for their own learning. We also launched 'Summer Adventures' with WebTV to use over the summer or during the winter while students review and refresh for their exams.

We worked with Dr. Tarek to come up with the third bucket of products for the EKB through Curriculum Connects. This product matches our best content to the national curriculum. Initially, we were working with the old curriculum 1.0. Any student or teacher, instead of going into the EKB and searching for something like cells or cell theory and finding millions of resources, could now go to Curriculum Connects inside the EKB and be able to search for their lesson. They would see the best content from Discovery Education associated with that subject. So, we provide three services in digital resources: the searchable database; Web TV; and Curriculum Connects.

EW How did teachers get training on all this new content and technology?

EW We partnered with the Specialized Council to do professional development for a pilot of 200 schools in the greater Cairo area on how to maximize the use of the EKB in the classroom, learn about STEM, and some best practices and 21st century skills. Those activities took place during the first two years of the EKB (2016-2017). And then, Dr. Tarek became the Minister of Education and took his big initiatives over to the Ministry of Education and Technical Education. He was planning to roll out a new Education 2.0 curriculum starting with the early grades KG1, KG2, and Grade 1, and then each year afterwards, roll out the new curriculum and content onwards. We shared with Dr. Tarek what

we have done in the States. Based on our track record, he thought we would be a great fit to support the curriculum content and professional development for Education 2.0 in those early grades. So, that is the evolution from where we were back in 2015 until 2018 with the start of the new education system.⁴

3. Working in the Egyptian Context

LH Some people think that this reform brings education content from the US and just transplants it into Egypt in a copy-paste way. Can you explain the process of adaptation of curriculum frameworks and books to the Egyptian context?

EW We do not just work in the US. As a company, we are specialized in creating digital content as core curricular resources all over the world. We also do that in the UK with our coding products, in Chile, Egypt, and other countries. Our curriculum team is equipped to understand international best practices. We were able to pull together a team led by Marty Creel, our Chief Academic Officer.⁵ We have experts of science and math and multi-disciplinary learning to work with the Ministry of Education in their curriculum department. They reviewed the new Education 2.0 framework to make sure it met international best practices in terms of rigor, focus, coherency, and clarity, and met the Ministry's goals for a new education system 2.0. The framework was checked against certain criteria, like would it allow students to score highly on the international assessments PISA (Programme for International Student Assessment), TIMSS (Trends in International Mathematics and Science Study), or PIRLS (Progress in International Reading Literacy Study)? We went

4 According to the Education Sector Plan of 2023, 'The digital illiteracy of most teachers is one of the most important bottlenecks hindering the efficient integration of technology to facilitate the educational process and increase its competitiveness. The actual use of computers appears to be limited: 62% of grade 8 maths teachers and 47% of grade 8 science teachers never or rarely used a computer to support learning during their lessons. In 2019, only 36% of preparatory schools used an online learning management system to support learning while 67% provided access to digital books. Concerning students, among grade 8 students only 39% had access to computers during maths lessons and 58% during science lessons' (MOETE 2023: 46).

5 For more information on Marty Creel, see his LinkedIn page: <https://www.linkedin.com/in/martin-creel-9320b768>

through and reviewed each standard and learning objective across the early grades from KG1 to Grade 3 to make sure it had that progression. We provided recommendations to the Ministry and Dr. Nawal Shalaby's team at the CCIMD (Center for Curriculum and Instructional Materials Development)(see Chapter 13 in this volume). We also held a series of workshops with the CCIMD department called, 'Curriculum Academies' where we came together to work on the curriculum framework to meet those international best practices. That is the foundation of how we bring US international experience from Discovery Education and marry it with the local expertise and institutions.

EE To be clear, does this mean that Egypt's curriculum framework is not modeled on another country's framework?

EW No, it is completely unique. In the beginning, we analyzed the curriculums of Australia, Japan, Finland, Singapore, the United States, and the International Baccalaureate (IB) to see what those curriculums all have in common that allow their students to rank highly on the international assessments. Then we looked at where Egypt wants to go with building a high-quality curriculum. We helped to support the curriculum and professional development of the CCIMD team, but it is entirely their curriculum.

EE What was the timeframe to get the new curriculum up and running?

EW The curriculum work started in December 2017. In the first year my understanding is that Dr. Tarek had to do a lot of the selling. He was going through a lot of these political policy changes. During this time, we were talking about the framework development and looking at international standards. We started the book writing in March of 2018 and had until August 2018 to write the twelve books (needed for KG1, KG2, and Grade 1). It usually takes about eighteen months for the whole development process for our blended model of a book and digital resource. And we did that in four months.

We finished twelve books. We started with math and multidisciplinary books for the three grades in English, and then we had to translate them all into Arabic. That translation part was also a huge process because we had to do the page layouts and just make sure that the translation was correct and accurate. It was a very intense time. But the beauty of it was

that everyone in the team was very passionate about the work. Everyone came together to really support this mission and this initiative in a way that we have never seen before. Everyone was willing to make the same sacrifices and work however many long hard hours we had to work, from our chief academic officer all the way through to me in the middle of CCIMD, to Dr. Nawal's whole team and our local team as well. So, it was a very intense time.

EE How did you personally deal with the time crunch?

EW When I flew from the States to Ethiopia, I got a call within twelve hours of landing that I should be in Egypt NOW because we needed to finalize these books. I didn't even spend one night in Ethiopia. I flew to Egypt immediately and went straight to Dr. Nawal's office. I stayed with her whole team for days to try and get these books finalized and finished. When we finally finished, I collapsed and slept for a few days (laughs). Then we had to get back up and go straight back to work on Grade 2. It was very intense.

LH Discovery Education and the CCIMD have very different institutional cultures and mandates. One is a private education company based in the US, and the other is a government curriculum center with Egyptian civil servants. How was the working relationship between the two?

EW It was a challenge at first but then we started to really build the relationship. We learned a lot working with the CCIMD and its director Dr. Nawal Shalaby, who is phenomenal. She is truly a leader. She has a huge workload and gets requests all the time from Dr. Tarek. I do not know how she gets everyone together and gets all the work done. She is like the military (laughs). We made sure that the members of the Discovery team working with the CCIMD had international experience and an open mindset. We did not want to come in and say, 'You are doing this wrong' or 'This is not up to international best practice'. Through a series of workshops, we worked with the team to explain the 'why' and built consensus.

There was a lot of back and forth and need to explain and understand new concepts. For instance, we faced challenges in trying to get them to understand that in early childhood students can see numbers and understand letters because they see them everywhere around them.

We also pushed back against packing the curriculum, something that happens not only in Egypt but all over the world. There is a tendency to want to cram everything in and try to teach everything to the students. We wanted to make sure that the CCIMD would be able to continue the work and build their own skills and expertise in the future.

I have heard Dr. Nawal tell them they have to push boundaries to be better than they were before. Now (December 2020) we are working with the CCIMD on Grades 4, 5, and 6 and it is a much smoother process. Every year we have gotten better, and we have moved the delivery timetable back months at a time. The first year, we delivered the Term Two books for review in early December, a time when they needed to be printed. Now, this year (2020) we delivered Grade 3 Term Two books for review in April. It is just a much, much better process. We have more breathing space. But the Minister is going to take any opportunity that he can to give us more work if we have more time to do things (laughs).

EE The new curriculum calls for a multidisciplinary and Life Skills approach. How was this achieved in the new books?

EW The great thing is that the Minister himself wanted a multidisciplinary curriculum. Historically, science and social studies was not taught until Grade 4. We suggested bringing the multidisciplinary from the beginning. With a multidisciplinary approach, there is a lot of project-based and hands-on learning. Students can go deep into the subject areas for a lesson around science or the arts, music, social studies, and math. Then they come and pull that all together in what is called a 'share'. The model within our books is, 'discover, learn, share'. Life skills are woven throughout through the four Cs: communication, creativity, collaboration, and critical thinking. According to the Ministry, these are the skills you need to become the ideal national Egyptian citizen.

EE Up until Grade 3 there are multidisciplinary books and in Grade 4 there are subject specific books. Can you explain this?

EW Grade 4 shifts from multidisciplinary to subject specific. We are now focused on science and math. Other publishers (National Geographic, Nahdet Misr, York Press) are focused on social studies and other subject areas like Career Skills, English, Arabic, and ICT. Interdisciplinary projects pull in and tie together subjects across all the courses of the year. To complete them, students have to use the knowledge and skills that they have learned within the different subjects.

EE *What are the main things you are working on this year?*

EW We started with Grade 4 which is a shift from the multidisciplinary approach to a subject specific approach. Grade 4 is also the time when the model for blended learning begins. Before, the digital content was just supplemental. Videos or other digital resources could be accessed on the Egyptian Knowledge Bank. Now, the Ministry is looking at a blended approach which entails having a lot of digital resources and infrastructure in place from Grade 4. The work is still quite intense because we must think about it in a different way. Building a digital product is even more time consuming than building in print. We have to produce videos and interactive features and string them all together, create this platform where there is a whole level of user interface and user experience. And we are talking about young kids and teachers who may not have proficient skills in using computers or technology.

4. Professional Development of Teachers and Supervisors

EE *With all these changes, how could teachers across Egypt, with all their differences in terms of teaching quality and resources, be prepared? How did you address that?*

EW Once we finished the outlines of the books, our Professional Development (PD) team started to write the content for master trainers. That was July 2018. We engaged the Mudiriya Facilitator Officers (MFOs) and the Idara Facilitator Officers (DFOs) who worked on scheduling and other logistics.⁶ We had to train 75,000 teachers within this first year and do the training while we were still writing the content. We were hoping to have the Teacher's Guide ready to print for this first round of trainings, but we could not do that, so we had to have snippets of the Teacher's Guide to use in the professional development training sessions. We started the training in August 2018 after the Eid. We got all of the master trainers to come to the Sixth of October Education City. Our teams literally had to stay there three weeks straight to train different waves of the master trainers because they only have a certain amount of capacity.

⁶ Egypt is composed of twenty-seven governorates (*muhafazat*). A Mudiriya is a Directorate, and an Idara is a district level educational administrative zone within the district.

We used three different approaches. One, we always kept it in mind that there are differences in teacher quality and access to resources across the country. We made sure that the content was equitable, and the resources were equitable. You do not need big lab equipment or anything like that. A lot of activities involve doing something outdoors or using very basic skills in the classroom. The second thing was introducing the Teacher's Guide, which is separate from the student book. It is designed to teach the teachers on how to implement the content and the curriculum in a literally step-by-step way. It explains the unit overview, theme, and has a step-by-step approach to lessons. It is almost a script of implementing the lesson. We came up with something called, 'Teacher Says', 'Teacher Do'. We made sure that the Teacher's Guide was comprehensive and anyone who read through it would be able to understand how to implement the lesson.

The third and most important thing is that we had a local team to conduct trainings with all teachers across the entire country. We implemented a cascade model of professional development. We released an announcement saying, 'Call to arms! We are looking for 1000s of teachers who are interested in being the beacons for the new curriculum'. Within two weeks, 10,000 teachers applied. I mean, it was crazy. Our local team sifted through the applications. We had a set of criteria to make sure that these teachers were high-willing and high-able. We selected 5,000 master trainers and provided the list to the Ministry. Our local team in Egypt who have been with us since the time of our work with the EKB, were really familiar with Discovery Education, STEM, multi-disciplinary, and our philosophy. They worked alongside us while we were doing the curriculum and the content. They fully understood the new curriculum and how to talk about it. Then we developed a PD program that had face-to-face sessions and digital sessions.

EE How did you organize the training sessions for the entire country?

EW These master trainers came into Cairo, all 5000 of them. They stayed several days for their training, and then went back to their districts (Idaras) and worked with the local ministry offices there. We had MFOs (Mudiria Facilitator Officers) and DFOs (Idara Facilitator Officers) to arrange all the trainings at the local level. They had to schedule rooms and release letters. We had to provide the materials like the Teacher's Guides and ship them across the country so that everyone

had everything they needed to implement the PD. They would then go online to our Professional Learning Journey (PLJ) platform and show how they practiced or connected with other educators. Everyone along the way was absolutely critical to making sure the system worked. Without one person in the whole process, it would have fallen apart. We also trained the supervisors and modified their role to ‘mentors.’

EE Were the trainings for the supervisors/mentors different from the trainings for the teachers?

EW Let me take a step back. The Ministry has the curriculum department (CCIMD), and they have subject consultants. The curriculum department sets the framework. The subject consultants implement the curriculum. The subject consultants tell the supervisors, who report to them in the hierarchy, this is your checklist of when things should be taught. When supervisors visit schools, they check to make sure that teachers are teaching a specific thing at a certain time with such and such resources. We wanted supervisors to play a different role, not just come in with a checklist and leave. Throughout the PD program, we engaged supervisors to serve as ‘mentors’. We taught them about how to be a mentor, how to coach, how to ask the right questions, how to guide and support their teachers. We also made sure that we did training in the summer to prepare them before the school year started.

EE Was someone at the Ministry managing all this professional development (PD) because there were other PD trainings at the time. Were you working in collaboration with TeachersFirst, Imagine Education, and the Japanese schools who were also actively involved in PD?

EW At the time, the Deputy Minister of Teacher Affairs Mohamed Omar was coordinating the different efforts to make sure we were all aligned. The Mudiriya and Idara facilitators coordinated the scheduling for the different types of trainings. The Ministry’s Teachers First Foundation was also part of the initiative with the specialized councils.⁷ Every

⁷ In 2015, the President’s Specialized Council for Education and Scientific Research partnered with Imagine Education (UK) Ltd to implement the Teachers First (TF) Program to provide teacher professional development trainings in all governorates across Egypt on learning in a knowledge society. Among other things, it was supposed to provide training, online and in-person, on the Egyptian Knowledge Bank. Using the cascade model, the Open University based the training in Egypt on the UNESCO Competency Framework for Teachers which allows each school to describe what a

teacher across the country was trained through them on foundational skills such as classroom management, assessment, lesson planning, and creating communities of practice. We then made sure together with the Ministry and Teachers First that we were enhancing what these teachers had already been through. We looked at their framework for professional development and developed a framework specific to the curriculum. We called it a Teachers First curriculum. We also trained on the Tokkatsu model at the request of the Japanese Embassy.⁸ Our local team completely supported the Ministry's request to review their local content and make sure we were all aligned around the new curriculum and the new Education 2.0 system. It was a real collaboration to get everyone aligned on this new curriculum.

EE How many waves did it take to train the master trainers?

EW Maybe five waves, because the PD was a series of three to four days each at the Education City. I think we spent five weeks in total for all the master trainers. Instead of training being the standard 8:00 a.m. to 2:00 p.m. per day, we were able to do night sessions. This way they could still learn and get the content, and we could cut the amount of time they stayed at the Education City which saved the Ministry money.

twenty-first-century, digitally literate teacher and student look like. It also facilitates a peer-to-peer support system so the teacher can develop skills of self-reflection that will lead to change at the classroom level. According to the Teachers First LinkedIn page, 'Each teacher is entitled to 4 days of face-to-face intervention over 3 months and continuous support from a national team of mentors. Teachers work in communities of practice in their school and virtually through the Teachers First collaboration website, which is available in Arabic and English. The system provides reports to show patterns of practice for both individuals and groups' <https://eg.linkedin.com/company/teachersfirst>. See also the Teachers First YouTube channel at <https://www.youtube.com/@teachersfirst6531/videos>

- 8 Tokkatsu refers to the Japanese educational model of holistic education. The Japanese Schools Project, is a joint initiative between Egypt's Ministry of Education and Technical Education and the government of Japan which started in the 2017/2018 school year with plans for forty-five schools distributed throughout the country. Tokkatsu activities were being implemented as extra-curricular activities 'To develop the child's skills and improve his behavior through (dialogue, discussion, problem solving, innovation, respect, and discipline)'. See the State Information Service of the Government of the Arab Republic of Egypt: <https://www.sis.gov.eg/Story/163545/The-Egyptian-Japanese-School-Experience?lang=en-us>

In the meantime, the MFOs and IFOs were on the ground. They started to get all their teachers and master trainers organized. We basically paired up two master trainers to a group of about twenty to twenty-five teachers. We built that community of practice and expanded on the Teachers First model. We wanted to make sure that they were paired because it is easier to train when you are supporting each other in the classroom. Also, the teachers have two people to go to if they have questions after the training session. They would basically do the same three- to five-day training period back home. It was just a constant flow of teachers getting trained over a certain period until the school year started.

They practiced and applied what they learned through the training and also using the Teacher's Guide. They would upload evidence to the PLJ (Professional Learning Journey) platform to demonstrate this progression of their learning. The supervisor/mentor would come in at certain points throughout the term to do classroom observations and check-in with the teacher to provide advice, support, or affirmation. Our local team would also go out to help support the supervisors.

We also did community events with our local team out in the field to get the parents together and have them learn what their students were doing in the classrooms. We wanted them to know about the shared activities and ask questions. For instance, at the end of primary one the students created an 'all about me' book of a couple pages. They put it up on the classroom walls. There is a gallery walk that happens. We invited parents to visit the schools and see these shared activities and ask questions. The teachers, supervisors, and local Mudiriya ministers were all there. So, everyone involved in the process was there to ask and answer questions.

Each term we did that whole cycle of training in person, cascading out to the teachers, having supervisors support the process through mentoring, our local team going out and giving that extra support, getting the community involved and having teachers upload everything to the PLJ to see how things are going. You got points based on what you did. And that is how teachers progressed in their learning from the start of the school year to the end of the school year on Education 2.0.

So, that is how it started. And now we have built a great foundation of the teachers and the master trainers. We are now in the third year. This year we trained the new Grade 1 teachers because we have a new wave of teachers not familiar with Education 2.0. It is this whole ecosystem and all parts dependent on each other.

EE Did you get feedback from the communities?

EW Yes, we heard stories about how the students were teaching their parents to read, which was pretty incredible. We also heard that students were making connections to their community based on some classroom activities. For instance, students learn about baking bread in the classroom. Then we have them write a letter about why it is so important to have a baker in the community and ask them to share it with the baker. There are all these pictures of local bakers with the kids' postcards with 'Thank You'. I mean, it is just incredible. And by the way, they also learn about how the bread you eat depends on an entire global food chain (see Fig. 14.1).



Fig. 14.1 A lesson explaining the global food chain needed to produce a loaf of bread. Grade 1, Term 2 Discovery textbook, Ministry of Education and Technical Education, 2022.

EE The Ministry is currently working on a national Teacher Professional Development framework. What is Discovery's role in that?

EW USAID is leading that initiative.⁹ We have been in conversations with USAID about what we have done in the past, and how we have implemented it so that they can learn from the work we have done to inform their thoughts on a national framework for teachers. But in the meantime, this is our third year of delivery of PD. And because of the COVID-19 pandemic, and also because of the Ministry's vision to provide teacher training in a more online asynchronous way, we have shifted the delivery to be virtual. We have delivered through the virtual conference facilities and webinars instead of face-to-face like we used to. We bring together the master trainers virtually. We also emphasize getting teachers on to their professional learning journey at several points of the year. We have a whole production side with our local team doing videos and cutting those segments into digital format. Teachers can now access a library on the PLJ as refresher content, in addition to the webinars that they get throughout the school year. They are still expected to upload evidence of their work and connect with their peers and supervisors. In the beginning of November 2020, we trained 96,000 teachers virtually.

EE Do you provide incentives for teachers and supervisors to attend the PD trainings?

EW It is important to incentivize them in a way that makes them feel important. We do certificates at the end of the year. We recognize them and their efforts. Dr. Tarek held an event for them and for Dr. Nawal and her team because they have gone through so much. You need to find the right people and then reward or recognize them in some way.

9 USAID's Teach for Tomorrow project was implemented by the Education Development Center, Inc. (EDC). As stated on the USAID webpage, 'USAID supports the Ministry of Education and Technical Education to design, deliver, and monitor its teacher professional development system. Partnering with the Ministry, this program co-designed Egypt's first teacher standards that define the skills and competencies that all primary-grade teachers need to succeed. The program is also developing a teacher certification and licensure model and an incentive structure that rewards teachers based on their performance' (see <https://web.archive.org/web/20250116142420/https://www.usaid.gov/egypt/basic-education>). The project expanded to include school leaders and supervisors and to support the Ministry's ICT Strategy. For full disclosure, Linda Herrera served as an international advisor on this project from 2021-2023.

EE You are working with over 90,000 teachers all over the country. How do you keep track of all the outputs and impacts?

EW We are doing this based on the Ministry's request and guidance. We do pre-assessments or pre-questionnaires before a new group of teachers come in, and before every training session. Then they go through the training session and get a post-assessment. We do all that collection digitally through the questionnaires and then the progression of those points on the PLJ. They upload things to the PLJ and there is an algorithm. That is really where we get a lot of the evidence of the teachers' progression. They also have peer-to-peer points and supervisor points to be able to move from one objective of mastery to the next objective which goes deeper into that skillset. It is a progression that goes from engaged to embed to enhance, so it is kind of like beginner to intermediate and then to advanced, but that is throughout the whole school year. With the new digital delivery method, we are excited to see how much more data we can collect and gather. And we also have done focus groups, which have been very important, especially on the product side of things, to make sure that the resources we are providing are relevant. The supervisors, with their tools as mentors and coaches, upload their school visit reports. We collect all of that and when our local team goes out, they also do some observation forms and school visit reports. That is how we are able to collect a lot of the monitoring and evaluation of the program. We are always refining, modifying, and adapting it.

5. Life Lessons from Egypt

LH The team at Discovery Education has achieved a lot, but there must have been some hard challenges along the way. Do you have any stories of how you managed the challenges?

EW I have always wished that I had a GoPro on my head the whole time, there have been so many stories. I'll share one with you that is really funny. Cairo has a big ICT fair and in 2019, the Ministry was showcasing all the publishers. Every publisher had a booth. The President was scheduled to make a specific stop at the Discovery Education, York Press, and Pearson National Assessments booths. Our local project lead and I got up early to set up the booth. We had to go all the way to the venue, we reached the parking lot, got on a bus, reached the gate, and

went to go through security. I had my laptop with me and was told that no laptops are allowed. I had to go all the way back and drop off my laptop and come all the way back. Then we realized we did not have the keys to get into our booth with all the books. We did not know it would be locked. So, we are scrambling because there is no display, and the President would be coming to our booth. We needed to showcase all our stuff. We needed to break into our own booth, but we could not figure out how to do it. And as we stood there I said, alright, it is okay, we will just talk about our materials. We will be the shining point of our booth. Then we looked up and realized the booth does not have a roof. My colleague literally jumped over the roof and got into our booth and started throwing the books over to me, like five minutes before the President came by. We managed to put them all up on display. No one would have known anything out of the ordinary happened except for the two of us and a few people nearby who were watching the whole commotion. But that is an example of every single instance of our work. It is always last minute, just in time, scrambling to get it done, figuring it out, and then, it works, it is fine, it is like, perfect. I have so many stories that are like that. This work would not be as fun, I do not think, if I did not have these challenges along the way which helped me learn and grow—with myself and with the work (see Fig. 14.2).



Fig. 14.2 Emily Waters presenting the first three Education 2.0 'Discover books' for KG1, KG2, and Grade 1, Cairo, 2018. Egyptian Knowledge Bank Facebook page, <https://www.facebook.com/photo/?fbid=774633686213707&set=pcb.774634782880264>

LH What have you learned from your years of working in Egypt?

EW With this work I was in the trenches. I was really in the trenches. I had mentioned to Dr. Tarek once that I have learned so much about life. I have this analogy that life takes twists and turns like the streets of Cairo, and I have learned how to master them. I think because I lived in Ethiopia and converted to Islam, I am aware of different cultures. A reason why our work has been so successful is that we did not lessen our quality because of cultural challenges. We kept pushing for high quality because we know that is what Dr. Tarek wants, and that is what he is striving for. He wants to be ranked as a country that has the best curriculum, the best teachers who teach the curriculum, students who graduate and will be able to be successful in the local or international context. I always imagine Dr. Tarek like this character from the movies, this mastermind with this clear board writing out all these algorithms and things. It is all just this beautiful masterpiece that somehow works. It is very serious work and sometimes just having a smile is the best thing to do. We know we are all in it for the same purpose. The work that I have been through with Dr. Deena, Dr. Nawal, Nelly, I mean, this is never leaving me. I have a deep love and appreciation for them and for the team because of what we have been through together, no matter our differences. I feel that we are on the same team, we are all in this together.

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7. Companion Video

Video 14.1 Emily Waters: 'Discovery Education in Egypt', Education 2.0 Research and Documentation Project, 7 December 2020, YouTube, <https://www.youtube.com/watch?v=PE4a3L2BDxU>

15. Nahdet Misr, Legacy Publisher for the New Arabic Textbooks: Interview with Dalia Ibrahim and Dahlia Fouad

*Linda Herrera*¹

Abstract

With the start of Education 2.0 reforms in 2017, the Ministry of Education and Technical Education commissioned the company Nahdet Misr, a leading Egyptian publisher since 1938, to develop the new textbooks for Arabic, Values and Respect for Others, and Christianity and Islam. It was the first time one publisher produced books for the two religions using a common framework and design. The company also developed a new methodology to teach the Arabic language that bridges the gap between classical and colloquial Arabic. Dalia Ibrahim, the company's CEO, and Dahlia Fouad, Director of Educational Content and Translation, detail the differences between the old and new education systems, and emphasize the need to adapt to digital futures in education.

Keywords

Arabic books, digital content, multidisciplinary, religion books, Egyptian Knowledge Bank, teacher training, supplementary books, private lessons, teacher training

1 This interview took place on 29 April 2020 via Zoom. Many thanks to the members of the Education 2.0 Research and Documentation Project team who supported this interview. Nelly El Zayat and Nairy AbdElShafy helped with background research and questions, and Heba Shama helped with transcribing the original interview.

1. A Legacy of Book Publishing in the Arab World

LH You have been working in textbook production in different Arab countries for many decades. What is the history of the Nahdet Misr company?

DI² Nahdet Misr Publishing Group has been working with the Ministry of Education in Egypt for more than sixty years. My grandfather started the company in 1938 in a popular district for books in Cairo called El-Fagala. He did not have a printing house, he was just a publisher with his own bookshop. He started with books on culture, fiction, and non-fiction for adults. For instance, he published books by Abbas Mahmoud al-Aqqad, the famous Egyptian poet and journalist. He also produced textbooks for ministries of education. My grandfather produced textbooks for eleven countries across the Arab world. When my father and my uncles took over, they continued the work.

Unfortunately, my grandfather passed away in 1973 when I was just two years old, so I do not know the exact history of the company. I do not have copies of all the books he published, but I do have some of the supplementary books. Beside textbooks he used to make supplementary books to help the students with their studies. He would put advertisements in different newspapers. We have a sample of one of them in the American University in Cairo for example. This is to say that what we are doing now is not our first project. We went through a lot of competitions with the Ministry of Education previously to develop textbooks. But what has happened this time with the Education 2.0 books has been a totally different story.

2. The Old Versus the New 2.0 System for Textbook Production

LH How did you get involved in the Education 2.0 reform?

DI We visited Dr. Tarek at his office in November 2015, before he became the Minister of Education. He was leading the Presidential Council on Education and Scientific Research at that time. We knocked at his door to introduce him to a digital project we had been working on for three years. We had digital content learning objects covering Grades

2 Dalia Ibrahim, Chairperson and CEO of Nahdet Misr Publishing.

1-9 in all subjects. At the time, our materials in math and science were only in English, not Arabic. He was very interested because he was managing the great Egyptian Knowledge Bank (EKB) project. However, we did not manage to sign a contract or put our content on the EKB at that time.

We met Dr. Tarek several times after that and discussed how our digital resources were very important for students. He said he would try to manage his budget for the next year to be able to buy our content and provide it for free for students in the government schools. We started working on the Arabic version of the math and science materials. Soon thereafter, Dr. Tarek became the Minister of Education. In fact, we met in London a week before his appointment. I told him we needed someone like him with his mentality and mindset to be the Minister. A week later President Abdel Fattah El-Sisi appointed him as Minister.

Later, Dr. Tarek introduced us to members of his team, Nelly El Zayat, Dr. Deena Boraie, and Dr. Nawal Shalaby who talked about Dr. Tarek's great vision (see Chapter 5, Chapter 6, Chapter 7, and Chapter 13 in this volume). Actually, he stayed for that entire meeting. They explained that they were working with Discovery Education on the reform and drafting a holistic curriculum framework. It was really our honor to start with them early in the process.

LH The new curriculum framework for KG to Grade 3 calls for a multidisciplinary approach. Based on your long experience working in the Egyptian education system, do you think Egyptian schools can handle this transition to a different approach?

DI The multidisciplinary method is a very important methodology to introduce to Egyptian schools. We have been in the field of publishing for eighty-two years and have been preparing a lot of textbooks and curriculums for different Arab countries. We even have our own supplementary books, *Al-Adwaa*, that cover all subjects from K- Grade 12. For us, the multidisciplinary approach is the best and most effective way of teaching students and getting them aligned on common themes and concepts from different perspectives. We do not think this will face a lot of resistance. The question is more on the delivery. How will this be delivered to the students? The concept needs a top-notch way of teaching the students.

DF³ I need to shed some light on the themes for the multidisciplinary books. The first theme for example is 'Who am I?' This is different for every grade year and in every subject. We are working from the same framework, but this system allows for a lot of creativity when you are asking 'Who am I?' across grades and subjects.

LH *Under the old system, 'Education 1.0', textbooks were produced through competitions organized by the Ministry of Education. How is that different from what is happening under the current 'Education 2.0'?*

DI In the past, the Ministry sometimes produced its own content to, from their point of view, reduce costs. In these cases, the publishers did not have opportunities to work. Other times, they would open the textbooks to a competition. They would release a framework for the subjects and publishers worked according to it. The Ministry would select the best content for the best price. It became a war of pricing.

There is a very interesting story about this that one of the newspapers wrote about. We used to enter competitions for all subjects. In one of these competitions for the Arabic language, we got a score of 98% for the quality of our content. The second publisher, who came after us, received 90%. We wanted our name to be out there, so we put a symbolic price of only one pound for the books. Of course, we were not thinking we would actually receive one pound, it was like a joke. Publishers would fight to get their books to the Ministry of Education. What happened is that the other publisher priced their book at just five piasters. If you can believe it, the Ministry took the other publisher's content instead of ours because of the price, even though our score was 98% and both were basically offering books for free!

LH *That story is very telling about what happens in textbook publishing behind the scenes. When did this story happen?*

DI It happened around 2008, 2009. The framework was not done properly, and the selection of the publishers was not done properly. I remember quite well in this period, from 2006-2010, they made a competition for Grades 1, 2, and 3 in Arabic and the Math. Our

3 Dr. Dahlia Fouad, Director of Educational Content and Translation at Nahdet Misr Publishing Group.

publishing house won the competition based on the quality of the books. The Ministry then opened a competition for Grade 4, and we won Math, Science, Social Studies, and Arabic, based again on the quality of the books. The Minister thought that Nahdet Misr was producing too many textbooks. So, what did he do? He gathered the other publishers in a room and started just dividing up the books saying, Nahdet Misr will take this book, and this other publisher will take that one, and a third and fourth publisher will take something else. I was in this meeting. It was unbelievable.

LH When you compare that process with textbook production now, what are the main differences?

DI It is totally different. You cannot even compare it. From complete chaos to someone with a very clear vision, very professional. This minister gets the best professional people worldwide, has consultants and technical people in the Ministry, and even advisors outside the Ministry like Dr. Deena Boraie to help get the best content possible for the students with the best framework, the best way of education. This is a totally different thing. Under 2.0 the focus is on the quality. Under 1.0 the focus was on the price, even when the price was essentially free. Or the focus was on dividing books between publishers even when they were not qualified.

LH Nahdet Misr has been commissioned to do the new Arabic language books. Did you have to take part in a competition?

DI No. The Ministry asked us to work with their team and submit some drafts. They were even negotiating with other publishers, one of them was Cambridge, our partner. They found that our content was the best, so they continued with us. They opened the way to not only local publishers, but even international ones.

3. A New Methodology for the Arabic Language

LH Nahdet Misr has been producing the Arabic language books for the new Education 2.0 curriculum. How do these books meet the needs of the new framework and overall goals of the reform?

DI We attended several meetings with Dr. Tarek and his advisors. We also met with Discovery Education to discuss the new curriculum framework and how the Arabic language and religion books could fit the framework's concepts and themes. Initially, they suggested that Arabic should be built within the multidisciplinary book. But from our side, as language experts, we made the case that it is important to have a separate book dedicated solely to the Arabic language. We discussed this with Dr. Tarek's advisors, Dr. Deena, Dr. Nawal, and Nelly. They agreed and accepted that we should have a separate book for the Arabic language.

LH How did the new books differ from the older '1.0' books in terms of content, teaching methodology, or other aspects?

DI We had already been working on developing a new Arabic language methodology that required teaching it in a totally new way. And to tell you the truth, we did not dream that we would introduce this to the Egyptian Ministry of Education. Our goal was the Arab Gulf. So, when Dr. Tarek took over with his vision, it opened the door for us to introduce this quality work for Egypt.

DF We conducted our own research on Arabic language pedagogy. We have been trying to bridge the gap between classical and colloquial Arabic. What happens in the classroom is that the teacher of Arabic talks in colloquial Arabic while teaching the students classical Arabic. It is difficult for students to come out reading, writing, and speaking Arabic. We have been developing our own curriculum and adopted a different way of teaching the language that combines a holistic and phonetic approach.

We let the student identify the sound and the sight of the letter, and at the same time try to identify the meaning of the words. The way this works is first, students will listen to a story from the teacher. Throughout this story they will get to identify the high frequency words which they identify by sight and by sound. The same applies to the letters. The new thing we adopted is that the letters are not learned in alphabetical order. They are learned in an order based on ease of pronunciation. The first two letters they learn, combined together, have a meaning. So, the first two letters 'alif' and 'meem' make the word 'mother' (*oom*) and the third

and the first letter 'alif' and 'bey' make the word 'father' (*ab*) and so on. So, when they read, they try to reidentify the letters. The vocalization allows them to put the vowel after the letter, so they will identify the letter with the vocalization.

DF We had all this in our mind, but it was not yet developed on paper. The Ministry's framework has four main themes that we had to follow. We took the themes and divided them into topics. We had to be sure that the stories were inclusive and had representation from different governorates and areas of Egypt. We also wanted to be sure to show Egyptian habits and characters. In a nutshell, that is what we did in terms of the Arabic.

We also had to keep in mind that some students would start school in KG1 or KG2, but others would start from first grade with no prior background. So, we had this issue that we needed to tackle. What we did was use the learning outcomes across these three years but with a deeper and wider scope as we progress. Each successive year would include higher cognitive and higher order thinking skills adapted to the age of the student.

LH *From a linguistic point of view, what models influenced your new Arabic language methodology?*

DF We were influenced by two approaches: the holistic approach of teaching a language; and the phonetic approach of teaching a language. We merged them because each methodology has its own pros and cons. If we only used the phonetic approach, the students would not be able to read until they learned all the letters. And for the holistic approach, you will learn the sounds of the letter through the words. At that point some students would not be progressing in the acquisition of a language. So, we merged both approaches. And we did this, also, because of the high discrepancy and difference between colloquial and classic Arabic.

The problem in Egypt and other Arab countries is that we believe these are the same language, we use the same word, 'Arabic' to describe colloquial and classical Arabic. But actually, they are not the same. The terminologies and the grammar are different. For example, if I am talking in classical Arabic, a male and female will have the same verb, but in the colloquial Arabic you have to conjugate verbs differently for

male and female. That is why we thought we need to come out with a different solution because with the existing solutions, students are not able to speak Arabic well. They do not love the Arabic courses because they are bombarded with a lot of terminologies and language functions that they are not aware of in their colloquial language.

LH Did you carry out any kind of pilot to test your methodology of merging the phonetic and holistic approaches to know if it is working, if it is an improvement over the old system?

DF No, we did not have a chance to pilot it nationally. We assumed it would work first through a process of elimination, because the other two methods were not working. At the same time, our educational team with the subject matter experts, have experience in teaching the language in one way or another. They tried it on their students, and they learned the language better.

4. Developing Religion Books for Christianity and Islam

LH The Ministry of Education commissioned the religion books for Islam and Christianity from Nahdet Misr. How did you work with the two religions? Who provided you with guidelines?

DF The CCIMD provided us with the basic life skills and the basic morals, and we developed them.

DI Yes, we needed two religion books, one for Islam and another for Christianity. We are a Muslim publishing house, so we thought we would just do the Islam books. But the Ministry team told us we have to have the same theory, approach, and look of the book for the two religions. It is not exactly that the books have to be similar, but they have to be speaking the same language because in their core, the religions are the same. For example, the books show how the world works using a Christian and a Muslim perspective, which are complementary (see Figs 15.1 and 15.2)



Fig. 15.1 A page from the Grade 2 book on the Christian religion about 'How the world works', Ministry of Education and Technical Education, 2022.



Fig. 15.2 A page from the Grade 2 book on the Muslim religion with a quote from the Quran, Surah Ali Imran, Verse 190, 'Indeed, in the creation of the heavens and the earth and the alternation of the day and night there are signs for people of reason', Ministry of Education and Technical Education, 2022.

DI Of course, this point of religion is very critical and sensitive. The Pope of Egypt, Pope Tawadros II of Alexandria, personally selected Pastor Poules to oversee the Christian books. Pastor Poules is the Pope's spokesperson and is very professional. He had been working with the Ministry of Education for almost ten years on developing good religious content. His presence served as the safeguard from the point of view of the content, to ensure we had the best material. And from the political side he was a safeguard since the Pope selected him himself. From our side, the approval of the church was very important. The Minister and his office directly facilitated this process through official letters and conversations with the Pope.

DF When we started working with Pastor Poules, he told us he had a dream to teach religion in a different way that was not so traditional. We wanted to align religion with the high order thinking skills according to Bloom's Taxonomy. We wanted to take religion as something concrete, not just abstract knowledge, but as something that actually touches their lives. When we sat together, he would give us an idea and we would develop it into an interactive activity. We did this for both the Islamic and the Christian religion books. We applied the same principles for both. We wanted things to be more practical and interactive rather than too theoretical.

Pastor Poules worked hand in hand with Dr. Dahlia Fouad to ensure the book had the same methodology and the same format as the Islam book. Even the graphic design and the games, the way of introducing the stories, student assessments, all aligned in the two books. The exercises or activities in the books developed the same higher order thinking skills. For instance, in each book there is a maze, but for the Islamic book the child reaches a mosque and in the Christian religion book he reaches a church.

DI It was a great success. I heard some people from the Christian community saying they wanted to use this content for people who live in different countries. We were very happy with this success story.

LH Did you have advisors for the Muslim religion?

DF All books about Islam have to be authenticated by al-Azhar. Actually, they did not modify anything inside the books, but they authenticated the books at the end.

5. The New 'Values and Respect for Others' Books

LH Nahdet Misr is writing the new books for the course, 'Values and Respect for Others'. Is the idea for this subject to eventually replace religion?

DI No, it is going to be an additional subject, but without reference to any religion. It is a whole curriculum to be taught across Egypt properly with a Teacher's Guide. We are starting with Grade 3 and will move to eventually cover Grades 1-9. The Ministry is requiring a new subject this year on morals, for building the character of the Egyptian student. Dr. Tarek asked us to do this book which shows the common morals and values among humanity. Morals are everywhere, all over the place, and we need to get students to be educated properly through stories and activities.

DF It took us a long time to build the team for the book because we wanted to include people with special needs, people from different governorates, males and females, boys and girls, Christians and Muslims. We have tried to include all the sectors of society. The students will feel that it is more of an activity book, a kind of coaching book for their life. For example, we are teaching them how to write a diary of the good things that happened to them and the things they want to change. All this is being taught through characters and stories with morals. It is a different approach. Morals is a continuation of religion and Arabic. Between Arabic, Islam, Christianity, and morals books, we have thirty or forty stories that have to be developed and illustrated. This takes a lot of time.

LH *What qualifications do you look for in the authors who work on these 'Values' books? Are they curriculum specialists or do they have other kinds of expertise?*

DI About our experts, it is important to understand that we do not just work in educational books. We also publish fiction and non-fiction books for children and adults. In the past twenty years we have won forty-one awards. Some are international, from the Arab world, and local. So, we use this mix of experts, including illustrators, who work together to get this material in the best shape. We also use external consultants and education experts. One of our illustrators is a top designer and educator. We have a huge team that is managed under the umbrella of Nahdet Misr to get these things out.

6. The Egyptian Knowledge Bank and Digital Content

LH How did you become involved with providing digital material to the Egyptian Knowledge Bank?

DI By way of background, we have been working in the field of digital content for twenty-two years. We established our software company, Nahdet Misr for Software in 1998. We also have an animation company. We did everything in-house—the programming, the software development, the animation, and the content development. We even started our own company for CD replication. Do you remember CDs! We used to sell the CDs separately from our K-12 supplementary books. About nine years ago, we decided to bundle the CD with the books. A couple years after that, we started working on totally new digital content that met the learning objectives for the private and international schools. This content ranged from basic videos, which could be live, 2D, 3D, or interactive videos. We also produced a lot of gamification of educational content with built-in assessments, and started selling it to the schools. We have a school and a teacher version that the teacher can use in the classroom through any interactive whiteboard or even a smart projector. There is another version for the students which they can download on their devices.

Getting back to the EKB, as I mentioned, this was the thing that triggered us to knock on Dr. Tarek's door. We introduced him to our Arabic content, including our cultural, fiction, and non-fiction books for children and adults. We thought these could be included in the EKB. He was more interested as a first step in the K-12 educational content, our digital learning objects. But at the time, this was November 2015, he did not have enough budget for our work, and he did not sign a contract with us. We continued with selling to the international and language schools. Then, after he became Minister, we resumed our discussions. He said he was interested but still did not have the budget. If I sold our products to the Ministry of Education, the content would be made available for free for everyone. I thought this would not be fair to our customers who have bought this content. So, I did not sell my content at that time. That was September 2016. Dr. Tarek finally managed to have a budget for our project, and we signed a contract at the end of 2018. Our content has been available on the EKB since that time (see Fig. 15.3).



Fig. 15.3 Dalia Ibrahim CEO of Nahdet Misr at an event of the Egyptian Knowledge Bank (EKB), 26 November 2018, Egyptian Knowledge Bank Facebook Page, <https://www.facebook.com/photo/?fbid=774633769547032&set=pcb.774634782880264>

After the coronavirus in 2019, we saw a huge shift in the behavior of students, parents, everyone. People went digital. Everyone is home now, so anything that can be done from home is the best thing for people. The resistance to change that we all studied in books, and we live with on the ground, has started to break in front of our eyes with COVID-19. People who have the access, started going online. They search for content to aid their studies through the EKB, and I believe the EKB use has increased tremendously.

Since COVID, we added special videos recorded by dedicated teachers to explain the missing parts of the lesson students did not get because of not being able to go to school. We got specialized teachers to record these lessons, and we just provided them to the kids for free. This was not a request from the Ministry, it was just a complimentary thing we wanted to do to contribute to our society.

DF If I may add to what Dalia Ibrahim was saying, we also did live sessions for the students to explain how to do the projects. We also did live and pre-recorded classes for the Thanaweya Amma students. In the recorded ones we used some animation and catered to different learning styles.

7. Private Lessons and Supplementary Books

LH Do you think that this growing infrastructure of digital content and lessons is changing or affecting the private lesson situation in Egypt?

DI The private lessons (laughing). It is a very difficult question to tell you the truth. For the students who know how to depend on themselves, they can start to study on their own. And parents who really want to help their kids will find perfect materials. They will not need any private lessons. But I can tell you, we do a lot of marketing research because we produce supplementary books for all K-12 subjects. One market research I remember quite well gave us very interesting insights about parents. It found that they do not want to exert efforts with their kids and prefer the easier way, which is to just send them to private lessons or any tutoring groups. Parents want to get rid of the kids and not be bothered by studying with them. So, the culture is a bit complicated, and it needs some time to change. Dr. Tarek is facing a lot of challenges, but I believe he will reach his goals. He is giving students all the facilities and resources they need. What is happening (during the pandemic) will lead to change definitely, it already started.

LH How has the reform affected the publication and the production of the external books Al-Adwaa? What kind of shape or form do you think these books should take going forward?

DI Concerning the supplementary books, we were thinking of going digital with them even before the 2.0 reforms. Definitely Al-Adwaa should adapt and change. And of course, with 2.0, the content takes a totally different shape. What we need is something more like a parent's guide. We are trying to help the parents help the students in the education process and to get them more engaged with a totally different perspective of studying.

DF Actually, when we were doing Al-Adwaa books in the 1.0 system, memorizing was the main skill the students were supposed to master. With 2.0 now, it is different, it is about thinking skills. In Al-Adwaa we are working on aligning the exercises with the learning objectives and working with different skills through the different activities and exercises. This is the main difference.

DI And to answer the other part of your questions, first let me give you more context. In the past, when students received the Ministry of Education books, they just put them aside. If they could afford it, they would buy the supplementary books. This was because the content in the Ministry's books was not well prepared, the printing was not that good, the quality was not that good. The other thing is that when we used to submit in different competitions for textbooks, the Ministry obliged us as publishers to stick to a fixed number of pages. They would tell you, for example, you have to prepare the textbook in eighty pages. Even if you needed 120 pages to cover the material, you had to stick to eighty pages. So, students preferred to have supplementary books.

With 2.0 we do not stick to a fixed number of pages, we just sit and work and come up with an outline. We do the whole table of contents, decide what we are going to cover, and how many pages we need. We plan ahead. And actually with 2.0 they give us the freedom as publishers to determine the best way to submit this content for the student. So, 2.0 is not only about the ideology behind it, the framework, and the specialized subject matter experts, but also about producing a good book that does not require the supplemental books. So, in answer to your question, of course, 2.0 is affecting the quantities of supplementary books we sell, but this is fine with us because if it is good for the students and for the community, and we are part of the community, then it is great.

DF I would like to add that one of the things we put a lot of effort in with the Arabic and religion books is the quality and art of printing. We paid attention to the font size, the percentage of the illustrations to the script, the place where the student has to write. We considered the age of the child in all these decisions and referred to the theories of printing. For the first time, we made the schoolbooks very interesting, very colorful, with nice illustrations adapted to the age range and the requirements of the age range. For the student, Al-Adwaa is no longer the better book, it is the same quality as the schoolbook.

8. Teacher Training

LH *Nahdet Misr has been involved in training the teachers on the new Arabic curriculum. What have you learned about ways teachers understand this new approach and if they are receptive to it?*

DF In Nahdet Misr, we have our in-house training team and are used to doing two types of training: training in our products; and pedagogical training with teachers on how to use the books. When some schools found out that Nahdet Misr developed the Arabic program, they asked us if we could give training to their teachers. We did these trainings for free including in some international schools through Al-Adwaa. We found that a lot of teachers were not really comfortable with the 2.0 program in general, whether the Arabic, the English, or the multidisciplinary. There is this fear of change, and fear makes you not capable of doing something.

For the new Arabic language program, we devised a training that combined two methodologies. We knew that teachers of the governmental schools were not up to date with all the teaching methodologies, so we first gave them an introduction to the pedagogy of teaching language in general, and a brief explanation of all the theories we used in developing the books. For instance, we referenced Lev Vygotsky, the elements of Bloom's taxonomy, and Howard Garner's theory of multiple intelligences. The second session was more practical in nature with workshops. It dealt with pedagogy and training on how to teach the book.

DI There is another dimension to the training. We signed a protocol with the Ministry to train all the teachers of Grades 1 and 2 in an entire governorate. It was on the morals' books actually and how they are being utilized in the Education 2.0 reform. The training dealt with how teachers can cascade this to their students. It was very successful. We had a whole week, and every day from 9.00 a.m. to 5.00 p.m. we would have four simultaneous sessions. We trained all the teachers in this governorate, and it was really amazing.

16. Rewriting Arabic Books for a New Generation of Readers: Interview with Nevine El Souefi

*Linda Herrera*¹

Abstract

Nevine El Souefi, CEO of the education consulting company Edupedia, worked with the publishing house Nahdet Misr and the Ministry of Education and Technical Education to develop a new methodology for reading and writing Arabic called the 'balanced approach' that combines the holistic language and the phonics approaches. She reflects on ways her previous experiences as a schoolteacher, a teacher trainer, and consultant for the International Baccalaureate (IB) prepared her for this important national work, and how she made decisions about whether the new books should meet teachers where they were, or take them where she thought they should be? She raises the importance of building the capacity of the next generation of teachers and curriculum specialists.

Keywords

Arabic curriculum, curriculum development, Education 2.0, Edupedia, Egypt, holistic language approach, International Baccalaureate, Nahdet Misr, phonics, teacher training

1 The interview took place in Champaign, IL on 22 March 2022 with follow-up interviews in Cairo in 2023.

1. On Becoming an Education Professional

LH How did you become involved in the education field?

NS² I started as an English teacher in a middle school, and went through the ladder of career advancements. I was promoted to head the English department, and then became a curriculum coordinator in a number of private and international schools. I later worked in national and international contexts outside my own school as a trainer and a curriculum designer with organizations like Amideast, the AUC Graduate School of Education (GSE), and the International Baccalaureate Organization (IBO). By 2016, I became the Regional Development Consultant for the IB in Egypt, and the Head of the Curriculum Review Committee for the diploma programs at GSE at AUC. During this time, I also did my master's degree at AUC in Teaching English as a Foreign Language (TEFL), and I completed my Doctorate of Education (EdD) in Curriculum and Instruction with a focus on Teacher Education at the University of Leicester in the United Kingdom. In 2012, I founded a company called Edupedia that specializes in curriculum design, training teachers, and general educational consultancy. I am the CEO.³

LH Edupedia has been active in different forms of training and consultancy. As the CEO, how do you lead and manage the company?

NS I oversee the company's academic vision that guides the community. It is based on what is happening in education around the world. I have a small board that advises me on strategic planning, but the final decisions of approving projects are up to me. I am the academic director leading the academic team of consultants, trainers, and curriculum designers. We are a horizontal company. We share ideas and listen to the business development director and the operation manager on how they see new projects and ventures. In 2016, the company started to become really influential because we were training large numbers of teachers and advising a large number of schools. We also ran the Eduforum, an

2 Nevine El Souefi, CEO of Edupedia.

3 Edupedia's Vision Statement reads, 'Our vision is to become a premier consultancy institution in education recognized for its excellence in delivering high quality educational services, based on the latest in research, with a diversity of services' (see <https://edupediaeg.com/our-story/>).

international conference we held in 2016, 2017, 2018, and 2019. In 2017 and 2019 the conference was done in collaboration with the American University in Cairo. The company took its place in the market at that time. I have trained other people to play leading roles in the company so that I can step back a little.

LH Prior to founding Edupedia you were a teacher. What kind of schools did you work in, and what did you teach?

NS I started my career as a teacher in the 1990s teaching middle school English in one of the private national schools in Egypt. At that time, private schools were very limited. The new language schools were supposed to be the best kind of schools on the market that professional parents could approach. These parents basically had the status of engineers, doctors, professional people with a university degree who wanted a good education for their children. They did not want their kids to be in public schools or in the old private schools. These new schools on the market were promising parents something that was not in other schools. There were new ideas about how schools should be, new ideas about learning. Actually, I enrolled my daughter in one of these schools, and worked there as a part-time teacher. When we later moved to another private English language school, I started as a part-time teacher there and then moved to full time. When I became a full-time teacher, I felt I needed to learn more about teaching.

LH Before becoming a classroom teacher, did you have training in education or pedagogy?

NS No. My bachelor's degree is in Business Administration with a specialization in Accounting. I wanted to know more about teaching techniques so decided to take an Intensive Training Course (ITC) with one of the very big trainers in Egypt at that time, Ms. Alia Mokhtar. She had a company in Alexandria called Modern Education. I stayed in Alexandria for a full month to take this course in 1998. The course was supposed to teach us how to teach English, but actually it changed my whole concept about learning. It was a big turning point for everything I did after that.

I became very passionate about the ideas I learned and returned to my school to implement them. The owner of the school asked me where

I learned all these things? I told him about Ms. Alia and he hired her as a consultant. I worked under her supervision for five years. I was the head of the English department at that time and I learned everything from her. She was mentoring me as a leader and as a trainer. I can say I was blessed to work with Ms. Alia at the beginning of my career. In 2000, I joined her company as a trainer, and eventually became a lead trainer. I worked with her until 2010 and handled most of her Cairo work. I learned so much. While I was with Ms. Alia, I got heavily involved in the International Baccalaureate and ways to bring it to Egypt.

2. Bringing the International Baccalaureate (IB) to Egypt

LH What was your role in bringing the International Baccalaureate (IB) program to Egypt?

NS In 2000 there was a school that wanted to be Egypt's first IB school. They contacted Ms. Alia as a consultant. She asked them to hire me to help them. Five days after hiring me, they sent me to a course in Prague to get the knowhow of the IB and transfer this knowledge to the school staff. When I read the guide of the IB Middle Years Program (MYP) with all of those requirements, I called Ms. Alia and told her, 'I do not think I can do this, it is too heavy'. She said, 'Yes, you can do it'. And she was right. I did it. I used to travel abroad almost every month for courses, return back to Egypt with the know-how, and share it with the school community, whether leaders, teachers, or others. I coached and guided teachers until we got the authorization for the Primary Years Program (PYP), and then for the Middle Years Program (MYP), and finally for the Diploma Program (DP), the last two years of the IB. I did all the documents and curriculums for all subjects for the Diploma Program, even subjects that I did not teach like math, business, Arabic, and the sciences. After this, they gave me the title, 'Leader of the Development Unit'.

The school encouraged me to apply to be an IB trainer. In 2009 I went to a workshop that trains and chooses IB trainers, which was another turning point in my career. I started as a workshop leader (trainer), then a consultant, and then a team member for authorizing schools. I gave trainings for English and Arabic language A and B, and IB philosophy and requirements. In 2016, I became a trainer of the trainers for MYP and PYP, a book author for IB books, and the regional development consultant

for the IB in Egypt. I also participated in writing some of the training material. When the IB organization was translating all the IB documents and curriculum guides into Arabic, I reviewed these for PYP and MYP. My job was not linguistic, I did not review the language. I reviewed the educational ideas to make sure the translation correctly conveyed the learning principles in a clear way. In 2014 I was also involved in the designing and training of a new curriculum for the MYP, 'The Next Chapter'. Being in the kitchen of the IB taught me how it all works.

LH What exactly is the IB in terms of the organization? Is there a main headquarters and structure?

NS The IB is not in one place. It is a real international organization. There are centers in different places around the world; Singapore, The Hague, Cardiff, and Washington. Each office does a different job. The one in The Hague is the service office for Africa, the Middle East, and Europe. This is the office I work with and where I was trained to be a workshop leader, consultant, and a team member for authorizing schools for the MYP.

LH How did you and others involved in bringing the IB to Egypt, manage in the local education environment? How did you prepare teachers for such a different educational philosophy and system?

NS When the IB first came to Egypt, the concepts and ideas were very new to teachers and schools. I was working in an IB school at that time. I wanted to find a way to deliver those ideas in a simple way and clarify them to make it easy for teachers to implement. My background as a trainer combined with working with the IB organization helped me, as did my master's and EdD programs. From 2015 to 2018, I was the Regional Development Consultant for the IB in Egypt. At that time, my job was to clarify the IB ideas to Egyptian schools and to the Egyptian Ministry of Education. I did workshops in schools, workshops for the Ministry of Education, and tried to show schools the benefits of the IB for their students, benefits I saw myself as an educator, as a leader, and as a mother.

LH Can students take the IB entirely in Arabic?

NS Now, in 2022, the Ministry of Education has IB schools in Arabic, so yes, they can do the IB up to the MYP in Arabic. The full Diploma Program should be taken in one of three languages, English, French, or Spanish.

3. Working on the Arabic Curriculum for Education 2.0

LH The publishing house Nahdet Misr contacted you to work on the Arabic books for Education 2.0. What kind of work had you done previously to prepare you for this big undertaking?

NS Nahdet Misr has been interested in my field of work for some years. We had worked before on other projects. When the Ministry offered them the opportunity to create the new Arabic curriculum, they contacted my company and we discussed some ideas, which they liked. They felt that our ideas aligned with the Ministry's current frameworks that are in line with those around the world.

I have been involved in many frameworks such as those for the IB, American standards, British standards, the Qatar standards, and Saudi Arabia standards. The Education 2.0 framework itself was aligned with other frameworks I have seen before. It was very good, innovative, and up-to-date on how to approach beginning reading. In fact, I was jumping out of my chair when I read it because it was the first time for me to see something in Arabic that is very professional and speaks about phonics properly. I was so passionate. This was something I could work with and develop. Edupedia partnered with Nahdet Misr and we made a contract. I started with KG1, KG2, and Grade 1. Our agreement is to continue through Grade 6.

LH What was the arrangement in terms of roles and tasks between Nahdet Misr and Edupedia?

NS Nahdet Misr is responsible for design, drawings and layout, publishing, and production of the books in their final form. Edupedia is responsible for the educational content of the Teacher's Guide and the student books. Of course, we had to understand the Ministry of Education's vision, and align with the framework and outcomes.

Everything has to be approved by the Center for Curriculum and Instructional Materials Development (CCIMD).

We attended meetings with Nahdet Misr, the Ministry of Education, and CCIMD. I showed them what I had and explained the research that underpins the curriculum with all the references. We started designing the program, and I was very careful about introducing this new approach to reading in a way that would make it easy for teachers to implement. This successful partnership with the guidance of CCIMD resulted in good work. We are proud that we were able to design a very detailed Teacher's Guide that supports teachers in the public sector and we are happy that we are continuing with them.

LH Who at Edupedia works on developing the Arabic textbooks? Do you have a special division for this?

NS I formed a team of designers consisting of Egyptian educators with extensive experience in teaching Arabic in different grades, people I have met and trained in different situations through the years. I always make sure that team members have diverse expertise in areas of teaching Arabic like in grammar, reading, early childhood, and psychology. Most of them hold a master's degree. The team is all female. I did not manage to find any men (laughs). Usually in Egypt, you will not find men in private schools who teach Arabic at the primary level. Maybe you will find them in public schools, but not in private schools. The teams from Edupedia and Nahdet Misr provided input and ideas for the new generation of teachers. We worked off the curriculum framework which specifies language objectives, life skills, national issues we should include in the curriculum, and broad themes we should cover.

There is a team manager from Edupedia, though I am the academic leader. I spent a lot of time training this team and building their skills. I guide them step by step and review every word. Unfortunately, some of the best ones left. Every time I decided to take a step back from the work, I would lose a team leader which meant I needed to return. Currently, there is a leader for this team and we meet and discuss the work on a regular basis.

4. A New Methodology for Reading and Writing Arabic

LH One of the longstanding problems in Egypt's education system has been the low level of reading as shown both in national test scores and international rankings for Grade 4.⁴ Do you think the new curriculum and approach can improve this?

NS The problem was not in the content as much as in the approach, especially when it comes to teaching very young students reading and writing. Throughout my career, I have sometimes faced challenges with this very basic idea of 'What is reading?' What is the *concept* of reading, and how should this develop in children? For example, to assess students in reading we have to give them an unseen text. We should not use a text they have seen before. It is absurd to put a seen text in the exam. It is not equivalent to a subject like social studies. It is reading. You cannot assess students by giving them a reading passage pulled from the textbook with questions from the textbook with a model answer. If a student cannot read and read an unseen text, this is a red alarm that we need to address.

Teachers should not use the old methods of memorization in this new curriculum. If they do this, the kids will most probably not be able to read fluently by the end of Grade 2 and they will not be able to write. You do not study reading by heart. It is not something to study. It is a skill. So, if students are being taught reading as something to study, meaning they read the same text more than once, or they write it out more than once, this is not going to lead to them reading.

LH Are these new books a bridge from the old system to the new one, or do they make a clean break with the old system?

4 Egypt ranked forty-nine out of fifty countries on the 2016 PIRLS (Progress in International Reading Literacy Study). 'The vast majority of grade 4 students have not achieved a basic level of reading skills, which limits their ability to learn other subjects. [...] A majority of grade 4 students (69%) did not even reach the low benchmark¹⁰ for reading on PIRLS and 19% only reached the low benchmark, whilst no one reached the advanced benchmark' (MOETE 2023: 103).

NS My dilemma was whether I should meet teachers where they were, or should I be more aspirational, and take them to where I think they should be? There are different approaches around the world, and people have strong opinions. The approach I had in mind was very different from what was currently happening in schools. In the curriculum of KG1, KG2 and Grade 1, we decided to teach students reading through a new approach called the 'balanced approach', drawing on the work of David Sousa (2005). This combines the holistic language approach and the phonics approach for language skills of reading, writing, speaking, listening, viewing, presentation, and linguistic elements. I shared this vision with my team and we also had collaborative meetings with the team in Nahdet Misr. We made sure we were all aligned on the curriculum path and the production requirements.

We put those ideas together in a way that makes sense to the teacher and the student. Students have to make connections on how parts of the curriculum relate to each other. We had to carefully balance between meeting the framework requirements and integrating new innovative ideas. We created a Teachers' Guide to provide detailed explanations on how teachers should use the curriculum, the reasons behind certain concepts, the activities to be used in the class, and how life skills are integrated throughout the curriculum. Everything was more or less fitting somehow. Now, if teachers stick exactly to the steps we use in the Teacher's Guide, the kids would be reading and writing at different levels.

LH How did you design the books to ensure they would be user friendly?

NS Through my work as a language teacher, I have been exposed to so many books. Some I liked, some I did not like. Clarity, organization, and structure are very important. I had a clear vision of how the end content should look. I designed the content breaking it up into units. I used the latest research in the field about how students gradually acquire skills of the language. At the same time, it had to be close to teachers and students.

The curriculum is divided into thematic units that are divided into different topics. Every unit begins with the holistic language, a story

matching the theme. The story is read to the children as a listening text. Children hear the language and understand the vocabulary because it is in context. They answer some questions and some specific sight words are repeated in the story. Those are high frequency words. The teacher points to those words while reading the story. In the holistic language approach students do not learn by blending letters. They know the sight words by sight. Teachers are guided to put those sight words on cards and put them in front of the students to play with them. For example, simple words like *qala* (say), *qalet* (he said, she said), *aby* (my father), and *oomy* (my mother), words like that are repeated a lot in children's literature.

The unit then introduces the sound of some letters phonetically, following the phonics approach. The child learns the shape of those letters, but not in alphabetic order. Letters are introduced in the order that would help students blend letters early to make words. They start blending and forming words after being introduced to their first two letters. As each new letter is introduced, they form more words. And letters are not just introduced with the one sound, which in Arabic is the *sukun* sound,⁵ but they are introduced with the *fatha*, *dhamma*, and *kasra* (the short vowel marks in Arabic). This is new to some teachers. They usually introduce all letters in alphabetic order, and after that introduce the *fatha*, *dhamma*, and *kasra*, which I think is a very confusing way for young children to read Arabic. These are sounds of the language and they have to be introduced together.

The unit continues with blending and segmenting words and includes some writing and speaking activities. This is the phonics approach. At the end of the unit we go back to the holistic language approach by having students read a very short story with the letters they have been exposed to, and the sight words that were introduced. They read the *whole* story and read very early. So, if they had been exposed to five letters, the whole story consists of words with those five letters and the sight words only. For example, they will be introduced

5 'The sukūn (سُكُونٌ) is a circle-shaped diacritic placed above a letter (حُرْ). It indicates that the consonant to which it is attached is not followed by a vowel' (see https://en.wikipedia.org/wiki/Arabic_diacritics#Suk%C5%ABn).

to the letters 'ح', 'ل', and 'ب'. The story will combine these to make the word, 'I love' (*ahibb*) something. And we put a picture. It is very important to let students understand the concept of reading and print early. In every unit we introduce three or four more letters. After that, we introduce the long vowels 'ئ', 'ؤ' and 'أ' using the same method. This method makes sense to the kids. So, we have two ways of teaching language: from text to letter, and from letter to text. They have to work in parallel. It is very critical that exercises use this method so that students gradually make sense of reading. The beginning units in KG1 and KG2 are focused on phonological awareness and concepts of print before introducing any letters.

LH This new Arabic 2.0 curriculum starts with KG, however compulsory schooling in Egypt starts in Grade 1. How can you build a curriculum when some students start it in KG and others in Grade 1?

NS This was another challenge to address. It is true that in public schools some students start school in KG1, but for others, their first encounter with school is Grade 1. We had to repeat what had been done in KG1 and KG 2 in Grade 1. This part took some work and designing, but it happened. We got very good feedback on this first curriculum. This positive reception encouraged me to push further when we started working on Grade 2. I was very optimistic about what we could achieve.

LH What did you want Grade 2 students to achieve in terms of reading and writing?

NS I wanted students at the end of Grade 2 to read a text fluently and be able to write at least a paragraph. This was considered very ambitious. In Egypt's new framework they are supposed to read and write by Grade 2. And it is not just Egypt's framework, every framework for any mother tongue has students reading and writing fluently by Grade 2. They should be able to write a paragraph. It does not have to be accurate, but they have to use the letters and write a paragraph. This is the norm for all languages.

5. Teacher Readiness

LH The success of the new curriculum and books hinge on teachers being able to understand the 'balanced approach' and teach it. How can you determine if these new books will be used by teachers in Egypt in the intended ways? Are there feedback mechanisms?

NS All my ideas about teaching methods and learning outcomes were discussed first with Nahdet Misr. Also, each book is reviewed and revised by CCIMD. They deal with public school teachers and understand what will work on the ground and what will not. We do not know the ground the way they do which is why we discuss things together. Both Nahdet Misr and CCIMD provided us with meticulous and important feedback, including revisions on the books. These served as an extremely important buffer for us. They were always caring and had a vision of where this is going.

All curriculums and all approaches to teaching a language are different. It is very important for a teacher to understand what kind of approach is being used. We wrote the Teacher's Guides for each grade to explain everything. We included details down to how the child should hold the pencil. When we wrote the introduction for Grade 2, we made it simpler, more to the point, and more understandable. We included details of different strategies used in the student book and explained them. We included a table with life skills used in every book and explained to teachers how they can promote them in class. We also tried to design the student books to make things as simple as possible for the teachers. As we got feedback, we adapted parts. From what I see every year, more and more teachers are reading the Teacher's Guide and learning from it.

For me, I am always looking at how all other mother tongue languages are taught, and how much students around the world are skillful in their mother tongue. I would like Egyptian students of Arabic to have the same proficiency in their language as any other student in the world. The problem is not the kids. If you teach them something, they will learn.

LH How can we know what teachers are doing in the classroom?

NS We do not know actually. I have some anecdotal information. Some members of my team worked in those schools and we get feedback from them. I personally try to talk to and interview heads of departments and Arabic teachers in Arabic private and public schools. For example, when I went to Sohag for training I met some teachers and asked them how the curriculum was going, what they liked, what they did not like. It was the first year for the curriculum. They told me they did not like at all the idea of not having the alphabet in order. They really did not like that! I told them that in all language teaching we do not use the alphabetic order anymore, whether for teaching reading in Arabic, Romania, English or whatever. And by the way, we teach the alphabetical order in Grade 4 when they start using a dictionary. We use it for dictionaries and things like that, but not for teaching reading. We introduce letters for reading in a way that helps students read earlier.

LH All students take a standardized reading and writing test in Grade 4. What kind of assessment do you think is the most effective to measure or understand childrens' reading levels?

NS I was wondering about the type of assessment that will be used. I personally think we have to take the students to a standardized international assessment. There is no other way. With my team I discussed including an example of a standardized exam in the Teacher's Guide. It is a way to let them know that this is what we want your students to reach. There are two very important ideas that I care about in assessment of those curriculums. The first is that students have an unseen reading text, which for me would be a big development. They have to answer questions they have never seen before. The second idea is to have writing on the exam. This is what they are taught in the curriculum. All the books through the years are developing the skill of writing and every topic ends with a genre, like a letter, a story, a CV, a recipe. They are supposed to write from fifty to one hundred words on average for each genre in Grade 4. So, if we are assessing what was taught, this should to be the form of assessment. Simple as that.

6. Negotiating Curriculum Content

LH How did you decide on the specific content for the books? Were there instances when you had to revise something because of differences of opinion with your counterparts (CCIMD and Nahdet Misr)?

NS We were always keen from the beginning to have meetings with Nahdet Misr and to send any finished parts to their curriculum unit to get approval before proceeding. We agreed on the broad guidelines from the beginning. Program managers from Edupedia led this process to help the project go smoothly. We have been working together for four years now and we generally are in alignment.

LH How did you make decisions about which topics and historical figures to include in the curriculum? Were there discussions, disagreements?

NS Yes, sometimes choosing appropriate topics and figures need discussions until we reach an agreement. Do we have topics and figures that students are used to, or should we expose them to new topics, and new ideas? Do we limit ourselves to Egypt or go international? Sometimes it is stipulated in the framework that we have to highlight specific issues. For example, the framework requires that we focus on young people who are innovators in Egypt. I thought we would not find a lot of people to choose from, but we found like one hundred young Egyptian men and women with innovations.

LH Did you need to balance between males and females?

NS Yes, it is part of the criteria. Also, we needed to include women's place in society. For example, in stories where we use a female character, even if she is a mother, her place is not in the kitchen. If the family is going to do something in the kitchen, then the family would be there, not just the mother, which is good. We also pay attention to including different types of disabilities, diversity, equity, since these are very much embedded in the framework (see Fig. 16.1)

LH How do you convey diversity and equity in the curriculum?

NS Every year, in more than one unit, we approach it differently. The message is how to accept others and how to accept differences.



Fig. 16.1 An inclusive approach to members of the school community. From Grade 3, Term 2 Arabic book, Ministry of Education and Technical Education, 2023, p. 141.

These differences could be about disabilities, for example, or people from rural areas who go to the city and speak and dress differently. We have to highlight this carefully and my team likes this very much. We are Egyptians, we live in Egypt, so we use situations with children that we all face. Some of the teachers on my team use stories from their own classrooms.

LH *In what ways are these books particularly Egyptian?*

NS They are very Egyptian, first because Egyptians did them. For instance, they have people from different cities and regions of Egypt, from Sinai, Nubia, Aswan, the Canal cities, Siwa, Wadi Gadid, from

everywhere. So, every text is zooming in on a part of Egypt and conveying its traditions, culture, stories, and history. We very much want young people to see Egypt this way, and see their role in their society. However, exposing them to other cultures is also important, exposing them to things they do not know about (see Fig. 16.2).



Fig. 16.2 A lesson on the Golden Age of Islamic Science. Grade 3, Term 2 Arabic textbook. Ministry of Education and Technical Education, 2023, p. 65.

LH How did you deal with religion and culture? Were there guidelines about religious minorities or things like this?

NS The Arabic curriculum for students from KG1 to Grade 6 is focusing on the development of literacy and language skills to make sure that students can express themselves well in their mother tongue. Religious ideas are included in the religion curriculum. There is also the ethics course ('Values and Respect for Others') in the curriculum.

7. Building Capacity for the Next Generation

LH There are not many people in Egypt who know how to develop textbooks according to this new language methodology. Do you see what you are doing as building capacity for the next generation?

NS Yes, I would say so. On two levels actually. I think that the younger employees who work with us, whether on the team from Edupedia or the team in Nahdet Misr, or in the team in CCIMD, understand now what we are doing and how it is built. We all have more capacity and knowledge than when we started. People working with us are now more informed and are more flexible. Also, I believe the capacity of teachers in schools, especially young ones who read the Teacher's Guide and implement those ideas, is growing.

LH What do you consider your greatest accomplishment in this whole project?

NS When I heard from people at CCIMD that they printed over two million books for KG1, KG2, and Grade 1, this for me was something (laughs)! All those kids have in their hands my thoughts, what I wrote. It was amazing! When I heard that I told them, 'I will do anything you ask me to do'.

LH Will those books remain as the Ministry of Education books for some time?

NS Yes, I believe so. Every year we do some minor revisions according to what CCIMD asks. We might need to rewrite a question or something like that. But the books stay intact. The Ministry serves as a good buffer for those ideas. I believe this reform is not only about changing books. Changing books happened before. It is about a curriculum transformation of how teachers teach language, how they perceive literacy, which was something not there before. I believe this curriculum reform initiated change in the whole system, it changed people's minds and how they do things. Now teachers make their own YouTube videos to explain how they use the new curriculum (see Chapter 28 in this volume). The idea of having a philosophy, an approach to guide what you do is now in place. And because those ideas are in the Teacher's Guide, more people are starting to understand not just *how* to teach, but *why* you should do it

in that way. I think this is one of the successes of this education reform, this shift in thinking. This is something that is very hard to change. When I think about it, it has been a blessing to be part of all this, just to be part of people reading, really reading. It is amazing.

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17. National Geographic Learning Joins Education 2.0: Interview with Tom Kelley

Nariman Moustafa and Linda Herrera¹

Abstract

National Geographic Learning entered a partnership with the Egyptian Ministry of Education and Technical Education in 2020 to provide books for Grades 4-6. The company's cultural expert Tom Kelley describes how they developed materials in print and digital formats for the traditional subjects English and Social Studies, and two new subjects, Career Skills, and Information and Communication Technology. He explains the process of collaboration with the Center for Curriculum and Instructional Materials Development to ensure the books were suited to the local context and reflects on cultural and political sensitivities around Social Studies. He recalls the sense of pride for all involved in being able to offer Egyptian students high quality books with stunning visuals.

Keywords

career skills, culture expert, interdisciplinary, multidisciplinary, social studies, international experts, ICT

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- 1 This interview took place on 5 January 2021 via Zoom. This interview was part of an oral history research training and collaboration between the Education 2.0 Research and Documentation Project led by Linda Herrera and Nairy AbdElShafi, and a group of MEd students from the Harvard Graduate School of Education (HGSE). The group included Nariman Moustafa, Ebtehal El-Ghamrawy, Claire Hao, and Katherine King.

1. A Connection to Egypt

NM *What first brought you to Egypt?*

TK² I came almost by mistake. I was only supposed to spend three days in Egypt on a transit to Kenya. This was back in 1998, when the bomb exploded in the US Embassy in Kenya. At that time flights were completely full for like two months and I could not get a flight back to the States. I had two choices. I could try whatever way to get back or I could take a leave of absence from my work for up to six months and just stay in Egypt because it is affordable and an adventure, things like that. So, I just stayed for a while. I was at somebody's house and the guy asked me if I wanted a job. I was like, sure I can teach here in Egypt. And that is how it started. And thirteen years later, I was still in Egypt.

I did not want to do what a lot of Americans do when they live in another country, which is to try to live like they are in the United States. I intentionally lived like Egyptians so that I could feel and understand the people that I am interacting with. I was curious about their life. I did not want to just go see the pyramids. The pyramids are great, but the real Egyptians are better. So even here in Dubai where I am now, I live in an area, which is more... it is not local, but it is not the western area of town either. I left Egypt in 2010 to come to Dubai. That is when I started working directly with National Geographic Learning. But Egypt still has a very special place in my heart. I have a lot of friends there and go back all the time. I have an Egyptian family that has adopted me.

NM *What kind of work did you do during your thirteen years in Egypt?*

TK I worked in centers for the first several years teaching English. I dealt mainly with university age students and some adults, except in the summer when you are dealing mainly with kids. Then I taught Grade 4 in a school that follows the American system. As the class teacher I taught English, Math, Science, and Social Studies, a variety of different subjects which is always interesting. I branched out into professional development, business education, and entrepreneurship type things. I worked with a couple of different publishers, worked with several different centers and organizations in professional development

2 Cultural Expert for National Geographic Learning.

and developing some TESOL (Teaching English to Speakers of Other Languages) and TEFL (Teaching English as a Foreign Language) courses. My last work in Egypt was directly with publishing. It was adapting books for the market, making sure that they were culturally appropriate and met the needs of Egyptian markets. I transferred to National Geographic after that, and still to this day, I am one of the two cultural experts for the company.

LH As a cultural expert at National Geographic Learning,³ what is your role? What does that mean?

TK All our products from around the globe are passed by me. I am the one who says, 'This is okay for the Middle East, this is not okay. If you want to sell the book here, do not put that in. If you are okay with selling it other places, but not the Middle East, you can keep it'. I look to see what might not be culturally appropriate.

LH Can you explain what you mean by culturally appropriate and provide some examples of things that you have flagged?

TK We can start with very simple things like the clothing. In my market, you are talking about some very conservative places like Saudi Arabia, the United Arab Emirates (UAE), and their ministries of education. I look for things like, are the woman's shoulders covered? If you have a male figure without a shirt, you should not show the belly button, general things like that which are quite easy to pick up. But then there are more nuanced issues. If a lesson is going to talk about problems with parents, what kind of problems are okay to raise? How can you talk about them? For example, in the UAE they wanted to include bullying. But you had to have a positive solution to the bullying, you could not just talk about bullying. A lot of times it depends on the country, and the day and mood of the person who is reading the text. Ministries often have to approve books, even for the private market. For example, if we

3 The Cengage Group which acquired the National Geographic Society's school publishing in 2011, issued a press release announcing its partnership with Egypt on 13 October 2021. According to that release, 'This partnership, which will deliver print and digital classroom materials, is part of Education Minister Dr. Tarek Shawki's Education 2.0 vision – a full-scale transformation of Egypt's education system by 2030 – underpinned by a focus on life skills, creativity, critical thinking and Egyptian pride' (Cengage Group 2021).

are targeting the Saudi Arabia market with a book, we have to be a lot more careful. If this book is targeted for Egypt, we know their line is a little bit more relaxed as far as what is acceptable and not acceptable. For example, in Saudi Arabia, you cannot have a boy and a girl in the same picture. Whereas in Egypt, you can. These are some differences to be aware of and to manage.

2. National Geographic Learning Enters Egypt's 2.0 Reform

NM How did National Geographic become involved with the Egyptian education reform? Did you approach the Ministry? Did the Ministry approach you? How did it all happen?

TK Just to clarify, 'National Geographic Learning' is different than 'National Geographic', the Society. We are essentially the educational arm of the Society. We do the publishing. National Geographic Learning has the exclusivity for TED talks in education. A lot of the explorers give TED talks, and many people involved in National Geographic do TED talks. It is a nice link which we can use in our materials.

We had heard about the education reforms in Egypt and knew that Deena Boraie was a senior advisor to the Minister. I have known Deena since 2000 (through the TEFL connection). The company had been dealing with Deena in her role at AUC (American University in Cairo) as Vice President for Student Life. AUC was using our materials, and Deena had worked with our authors. We approached the Ministry through Deena. At the end of 2018, we started to get positive responses from the Ministry saying, yes, we are interested. So, in the beginning of 2019 we had our first meeting with the advisors, Deena, Nelly El Zayat, and Dr. Nawal Shalaby. In September 2019, we were able to get a meeting with the Minister, Dr. Tarek Shawki. As you know, he is very busy, but we were lucky to get everything worked out. That is when we were given the official yes to work together. We signed a memorandum of understanding (MOU) in February of 2020 to work on the books for Grades 4-6 for English and Social Studies, and then we added Career Skills and Information Communication Technology (ICT). We were

given several documents like the KG to Grade 3 frameworks that had already been done, and the learning materials for those grades.

3. Forming Consensus and Team Building

NM Did you work with the Center for Curriculum and Instructional Materials Development (CCIMD) on the development of the new textbooks?

TK Up to that point, the curriculum department (CCIMD) had essentially been focusing on KG to Grade 3, developing those frameworks and learning materials. There is a difference with Grades 4-6 in terms of the mentality of the students, what you can do with them, what you cannot do with them, it changes. We were focused on developing that understanding to make sure we were all on the same page. In March 2020, we had our first of three workshops in which we set the base.

NM Can you talk about those workshops and how they led to the production of new curriculums and books for Grades 4-6?

TK There were three sets of workshops. We also had several discussions beforehand with CCIMD on what needed to be done, what aspects we should focus on for these workshops. CCIMD decided that the first workshop in March 2020 should include all the subject experts regardless of whether they were involved in those new curriculums. We were setting the stage for the differences in Grades 4-6 compared to KG to Grade 3. In fact, during this first workshop, Grade 3 books were still in development, and the CCIMD team were in the middle of reviewing the books. CCIMD did a wonderful job handling all these demands. The workshop took place after their workday, at 4:00 or 5:00 p.m. because the experts in the US are on a different time zone. Deadlines are so tight, and March is one of the times when they had to sign off on things for the coming term. Still, they all attended. They were very interactive, and we were extremely pleased with how much feedback and growth we saw during those workshops. It was really very impressive. One of the goals was to make sure that a pivot was being made from thinking about KG to Grade 3 where the focus is on the *multidisciplinary* approach to thinking about Grades 4 to 6 where there is a switch to the *interdisciplinary* approach.

NM *What is the difference between ‘interdisciplinary’ and ‘multidisciplinary’ when it comes to the curriculum and the books?*

TK For the interdisciplinary books, there are separate subjects, but they are still being mixed together. You have different subjects inside of one subject. For example, English should have Social Studies, Math, and Science, inside of it, that is interdisciplinary. Multidisciplinary is when one subject has multiple subjects within it all in one book. This leads to an interesting thing with Career Skills because it is a multidisciplinary, interdisciplinary course. It has nine subjects in it. But it also includes links to Arabic, Social Studies, Math, and Science. For example, in Social Studies you’ve got History, Geography, Economics, and Civics. Each one of those can be a separate course. Some books have individual sections within a larger course. There might be a specific unit about History, Geography, or Economics. The Ministry was very clear that they did not want this kind of separation, they wanted subjects to be intermixed so that when you read a lesson you cannot tell whether it is an Economics or a Civics lesson. You can see Math inside of a Social Studies lesson. You still get that feel of a multidisciplinary book, but within those individual subjects. This was the part of the vision of CCIMD. They wanted to do that interdisciplinary approach for Grades 4-6, building on the multidisciplinary books from KG to Grade 3.

NM *To recap, the first workshop was to set the stage and bring everyone together to prepare for Grades 4-6. What did the second workshop focus on?*

TK In June 2020, we developed a curriculum with CCIMD for Grades 4-6 and spent three days on each subject, English, Social Studies, and Career Skills. We worked on the ICT course online. All subject specialists were in the room together. On the first day, we would bring a subject expert and have what we call a ‘red pencil day’. This is where you ask the participants, ‘If you had the power to do whatever you wanted for these grades, what would you include? What would you envision? What are your dreams for this subject at these grade levels?’ We talked about some of the requirements and the expectations. The second day, we went into more details about standards, about what makes a good standard and indicator. The

third day, we did some other bits and bobs. That was essentially the last chance to make any changes.

NM Who were the international experts who joined the workshops? Were they mainly from National Geographic Learning?

TK Our internal experts were advising but we wanted to make sure that we had external experts as well to get that extra validation. We had Dr. Bill Edgington, who is the coordinator of the Comparative and Global Education graduate program at Sam Houston State University in Texas. He was the only expert who managed to get to Egypt because of the pandemic. With the rest of the experts, it was all virtual. It is important that you do not just choose somebody who is an expert in that field, but who understands there are other cultures and other perspectives out there. Bill has worked on the State of Texas's frameworks for Social Studies, but he has also worked with people in parts of Africa and China. This is important because especially Americans who have not been outside of the United States, can have a limited view and be a bit rigid. The best thing about Bill is that he will do just about anything that you ask. If you asked him to get up at two o'clock in the morning, he would get up. We also had Dr. Jody Crandall who is now retired but she was the director of the Ph.D. program in language literacy and culture at the University of Maryland, Baltimore County. She is very active in TESOL. For Career Skills we had Alexis Mentum, the Managing Director for the Center for Global Education, Asia Society. She has done a lot of work on the PISA (Programme for International Student Assessment) exam and has worked on writing national curriculums and different frameworks. She is very knowledgeable about frameworks. The last person was Dr. Ben Brown, who works with the State of Washington to help teachers work with educational technology and implement ICT in schools.

NM What changes were made to the curriculum framework after these workshops?

TK For English, we noticed that there was no leveling system in the existing framework. We added a chart based on the Lexile Level.

NM Can you explain the Lexile Level and how it is used?

TK For reading, from kindergarten up to Grade 12, you can refer to this chart to know the Lexile Level that you need for grade level.⁴ We also added guidelines for how many words should be in a passage for reading and writing. For instance, if you are going to have students write, how much should they write at a sentence level? How much should they write at a paragraph level? How much should they write at the essay level? We worked specifically on Grades 4-6 but also did a table for KG-Grade 12, because you have to look down from where you are going to start, and then you can plot out where you will go at the end. If the average Lexile text in the university is 1,400, we need to get to a certain level so that students are not going into university at, for example, an 800 Lexile Level.

NM *Just to clarify, were the curriculum frameworks already completed by the time you started working on the new books for Grades 4-6? Did you provide inputs on them?*

TK When we entered the reform, the frameworks had all been completed, but the learning materials had not been completely developed. One of the inputs we gave was that you can develop KG to Grade 6 curriculums without worrying too much about how they are going to graduate (what the ideal graduate of Grade 12 will look like). But once you start Grade 7, you really need to have a good idea of the requirements students need to graduate at Grade 12 and can start to make the materials appropriate for that. Discovery Education and National Geographic Learning are in discussions with Minister Tarek Shawki. We have meetings regularly to explore what is going to happen in Grades 7 to 12.

NM *How do you coordinate your work with Discovery Education, another company working on Egyptian textbooks?*

4 The patented 'Lexile Framework for Reading' describes itself as 'a scientific approach to measuring both reading ability and the text complexity of reading materials on the same developmental scale'. The Lexile measurements are designed to 'personalize learning, measure student growth, communicate with parents about their child's progress' (see <https://lexile.com/educators/understanding-lexile-measures/>).

TK Most of our contact is with CCIMD but we have had several conversations with Discovery as well. We have bi-weekly meetings with Discovery to try to make sure that the learning materials line up in several different aspects. For instance, we want to make sure that if we are using a specific Arabic word for 'lesson', that Discovery is using the exact same one. National Geographic Learning material and Discovery Education should coordinate as much as possible. We are even doing that with pair work and group work. Discovery has done things they call, 'knee to knee', or 'shoulder to shoulder' teaching. So instead of calling it 'pair work' we are going to use the same language as Discovery.

NM *Your position is interesting because you mediate between the international experts and the Egyptian team. What have you observed about how compromise and negotiation take place?*

TK The first thing all the experts commented on was how actual debate was going on during the workshops. Dr. Nawal is very wise about letting her team debate the different sides and points of view. Everybody has a chance to air their opinions. She does not prescribe, 'This is the way'. She lets the process play out. She lets that debate happen so that a consensus can be formed. But if the consensus does not come together, she takes a decision. That was extremely refreshing to see because ministries everywhere in the world can be so top-down. To see that healthy debate with the team was very impressive. If arguments dragged on for too long, she would eventually say, 'That is enough. This is the direction that we are going. This is what the majority believe, this is what I think the experts are saying, this is what I believe'.

People also learned from each other's expertise in the workshops. In the Social Studies workshop, there were subject experts from English, Arabic, Math, Science, and ICT and Social Studies of course. Each one learned how the other's subjects are done and how to integrate and make links between them. That is something that we made them do. We put them into breakout rooms and said, 'Okay, there are experts from each of these subjects. What kinds of projects should we do? Can you see something that the subject expert might not have seen?'. So, seeing that growth and the engagement was really quite nice.

4. Social Studies Sources

LH Social Studies can be a very sensitive and contentious topic because it deals with things like national civic life and history. Have there been debates about the content and direction of the Social Studies books?

TK Well, I have taught Social Studies for Grades 4-6. These years are not as contentious as the upper grades. But there was a lot of discussion on the focus of each grade. For example, we decided that Grade 4 would be focused on Egypt, but through stories. Grade 5 would be on Egypt as well, but with a more traditional type of Social Studies, less through stories (see Fig. 17.1).

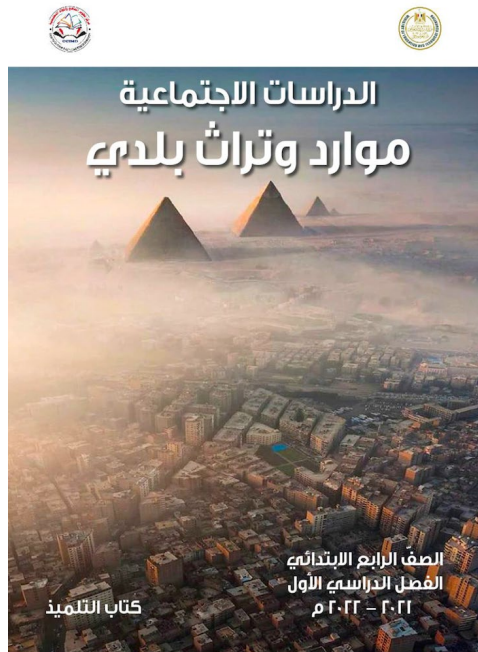


Fig. 17.1 Cover of Grade 4, Term 1 Social Studies Book, Ministry of Education and Technical Education, 2021.

For example, the first lesson we developed for Unit Two talks about how cotton was discovered in Egypt. As the story goes, a guy was walking through a garden, and he came across this strange flowering plant. He took a piece of it and did some studies and discovered that this could be

useful for something. This is where cotton made a big boom. The profits of that were actually used to help pay for building the Suez Canal. So, it is that story behind finding cotton in somebody's garden, and then going to the leadership, the ruler of the country at that time, taking that forward and developing the skills of the people for that, and then using that money to help the society.

NM What was the source of that story? It is not how I understand the history of cotton in Egypt.⁵

TK It is actually from the Smithsonian. We always try to use very reputable sources. We were lucky enough to stumble across that story quite early on, which is one of the reasons why we were like, let's do this one, because we have this source and this wonderful story around it. We thought it would be a wonderful sample to show to the Minister and the committee as a prototype, an example of what is going to come and what the product can be.

NM Has the Ministry ever proposed a different narrative or another way of telling that or any other story?

TK The Ministry has not seen all of what has been developed. We will know more in March and April, but hopefully not. We have two cultural experts. One of them is British/Egyptian, and then me, who lived in Egypt for a long time. We are both heavily involved in the country. And I have a lot of friends, so whenever we are writing something new, I call them and ask them to tell me all the stories about this topic. Hopefully we understand the local aspects and local knowledge.

NM What criteria do you use when choosing a source? What are some examples of the kinds of sources that you are using?

5 The interviewers were not familiar with this story about the 'discovery' of cotton in Egypt, but later found evidence for it in the sources. Apparently in 1819, French textile engineer Louis Alexis Jumel did indeed stumble upon some cotton plants in the neglected garden of a retired Turkish-Egyptian official in Cairo (AlSayyad 2020). Our understanding of cotton is more about how it was introduced to Egypt as a cash crop, as discussed in scholarship by authors like Mohamed Saleh (2017) and Ahmed Shokr (2021).

TK We always have to make sure that sources are reputable. So, if it is just a website without academic links, or if it looks a bit shady where something is only mentioned on one site, we will not use it. We need to have it documented in multiple sources. You need to check who is publishing it. We feel very confident about the cotton story because the Smithsonian is going to have checked their sources and the stories carefully before including them in their body of work. For example, we would never use Wikipedia. And in fact, that is going to be one of the lessons that we are doing for ICT, to teach students how to look at sources and determine whether they are legitimate and trustworthy.

NM *I am focusing again on Social Studies because it deals with forming a whole person's identity. It includes stories about our lands and about who we really are. There are many narratives. I wonder if you are collaborating with Egyptian scholars or scholars whose work is deeply focused on Egypt?*

TK We do dip in and out of these sources. In Social Studies you have so many broad topics and areas. We go from cotton to renewable energy to folk art. And that is just in the first three lessons, literally. So, to find one source that is about those three vastly different areas, it is difficult sometimes. But we try to find interesting stories. So, for example, the first lesson after cotton, is about renewable energy. The very first solar power plant was in Egypt. So, we are talking about this and trying to instill pride in Egyptians that they did something before anybody else did.

NM *You said Grade 4 has stories and Grade 5 is more traditional. What do you mean by traditional? And what happens in Grade 6?*

TK In Grade 5 you are going to be doing a lot more map work and digging into Social Studies, rather than just learning about the story. In the cotton unit in Grade 5, for instance, you are going to have to really dig into subjects like the commodities of Egypt. We provide a list of the top commodities in Egypt, what they sell for, things like that. We also have lessons on the Suez Canal and the economy (see Fig. 17.2).



Fig. 17.2 The Suez Canal, from Grade 5, Term 1 Social Studies Book. Ministry of Education and Technical Education, 2021, p. 49.

Grade 5 has more teeth as far as Social Studies is concerned. So, Grade 4 is more oral history and Grade 5 jumps into these details and looks at them very closely. Grade 6 is about the Arab world and moves to the Eastern Hemisphere, Western Hemisphere, those kinds of things. But you are still going to have aspects of the international even in Grade 4 where there is the map of the world. Students have to recognize Egypt on that map which means they should be able to identify other countries, but we do not deal with them in detail.

5. Prioritizing Explorers and Visual Materials

NM How different are the new books that you are working on compared to the old books?

TK We have looked at the previous material, and National Geographic Learning brings fabulous visuals. This is a main difference. If you take one of our books and you just flip through it, you will find attractive pictures that make you just want to dive into that material. A key attraction for kids at this age is that visual aspect. If you can get a kid to look at a page and say, 'That is beautiful, I want to know more about it', you have won half of the battle. They become more interested than if they were seeing just another long text about something (see Figs 17.3 and 17.4). Another thing is that because we have explorers within the Society, we feature them in all of the series. We include a video link to them, and the kids can see what the explorers do. And in some courses like ICT, the kids will try to replicate what the experts are doing.

NM *Are the explorers from all over the world? How are they connected to the topics?*

TK They are from all over the world, and we connect them to the topic as well. For example, in Grade 4 Social Studies there are a lot of maps. The students are learning what aspects of a map they should look at, the rows on the compass and the how to use the key. The explorer we have is the National Geographic cartographer. He is their expert on all things relating to maps. They are going to learn about him, his work, how to make maps, and different aspects about what makes him excited about maps.

With Career Skills, the first explorer we present is Albert Lin, who actually lost his leg. He was an explorer looking for the tomb of Genghis Khan. He was doing all of these very interesting things when he lost his leg. But he is still doing them. He is currently doing research on Mayan temples and pyramids. So, the lesson shows him not only as a person who has lost his leg, but as an explorer. This shows that inclusion, of people's determination to do anything. They might need special equipment, but once they have that, the sky's the limit.

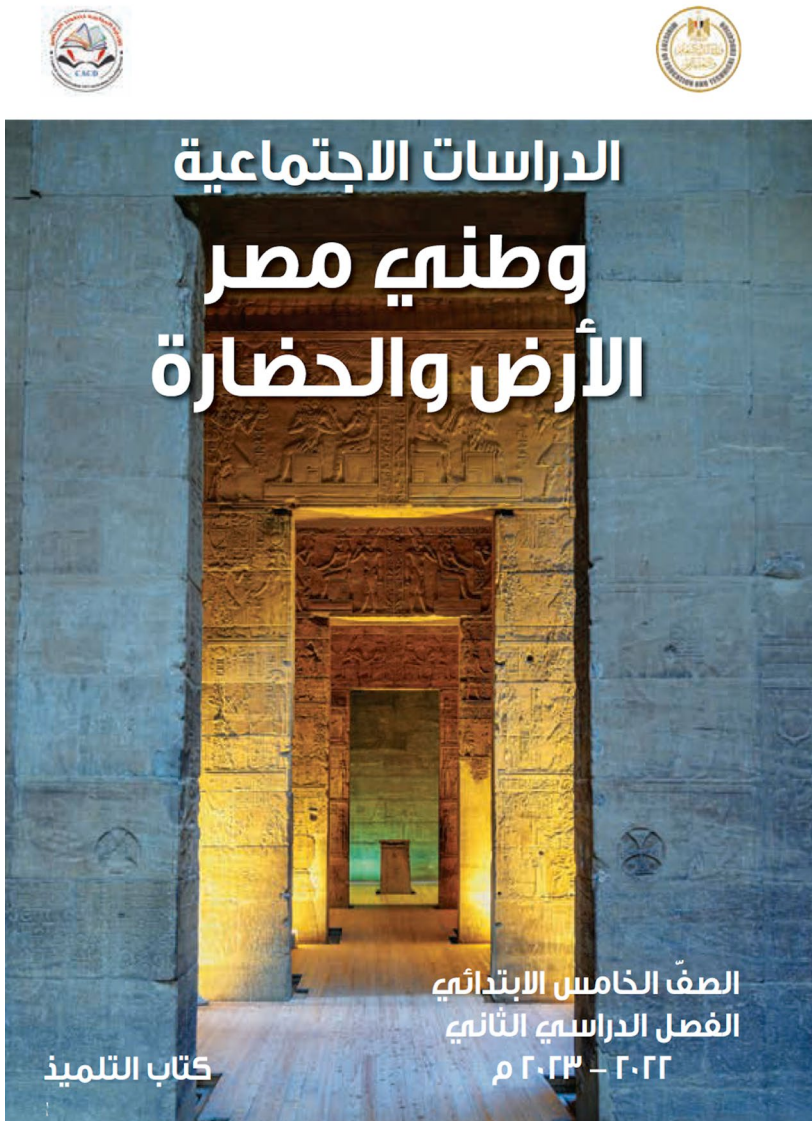


Fig. 17.3 Grade 5, Term 2 Social Studies Book, Ministry of Education and Technical Education, 2022.



Fig. 17.4 Lesson on Ancient Egyptians, Grade 5, Term 2 Social Studies Book. Ministry of Education and Technical Education, 2022, p. 8.

6. Introducing Career Skills

NM Career Skills is a new subject. Can you talk about how this came about? Is it something the Ministry asked for, or did you propose it?

TK Career Skills is the brainchild of the Ministry. They are the ones who came up with this. It was mainly Dr. Nawal and Deena. The idea is that there are certain skills and certain types of jobs that people might not consider or appreciate enough. Not everyone can be a doctor or engineer. There are lots of people who do amazing things even if

they have never been to university. If you like agriculture, and you are good at art, we have a botanist-illustrator as an explorer, somebody who goes out and draws and documents all the plant life in her country. If somebody in Egypt has those two interests, they could combine them. You do not need a degree to do that. Egypt is going to need to have many jobs filled to survive, I mean, this is a much bigger issue. You are going to need people working in industrial fields, hotel and tourism, all kinds of things. And they are not doing it just because they need a paycheck, but because they see the value, the bigger value of those careers. They serve a greater purpose.

NM Did you have direction on the kind of industries to focus on, because that is also related to the economic future of the country.

TK Yes, there are nine different subject areas that we are combining together: home economics, agriculture, industrial, commercial, art, media, library, theater, hotel and tourism. That is the list we have at the moment, but we are waiting for a bigger list to include even more types of jobs. We are focusing a lot on home economics and sustainable living. The first theme for Career Skills in Grade 4 is going to be on family and the skills needed in the family. We intentionally chose a father, a male figure, as the explorer instead of going into that traditional stereotype of a mother and her child. And we intentionally flip that around and say, no, fathers have a role in the family as well. And that should be highlighted. We should not just go into the stereotypical things of women at home. The other three explorers, by the way, are all women. We have four explorers in Career Skills.

NM Are you planning to have Career Skills in Grades 4 to 12?

TK We are in discussion about when it is going to stop. We think it is going to continue at least in Grades 7-9 and in these years, it is going to be focused on entrepreneurship. But we do not know for sure. All of that is still in discussion and lots of things can happen.⁶

6 Minister Tarek Shawki who was overseeing the book development and contracts with National Geographic Learning, was replaced in 2022 by another Minister of Education, Dr. Reda Hegazi. He cancelled the Career Skills course. He was replaced by a new Minister, Mohamed Abdel Latif in 2024. He discontinued work with National Geographic, and at the time of writing, is redoing the textbooks.

7. The Production Process

NM *Do you develop these materials in English or Arabic?*

TK We do both. We do a certain amount of writing in English, but then we rewrite in Arabic. We do not do translation. We have to make sure with the English that we have got a base for the experts to comment on because of course, they are not Arabic speakers. They must be able to see something and say yes, you are in the right direction. But then we rewrite it in Arabic, with the same points (see Fig 17.5).

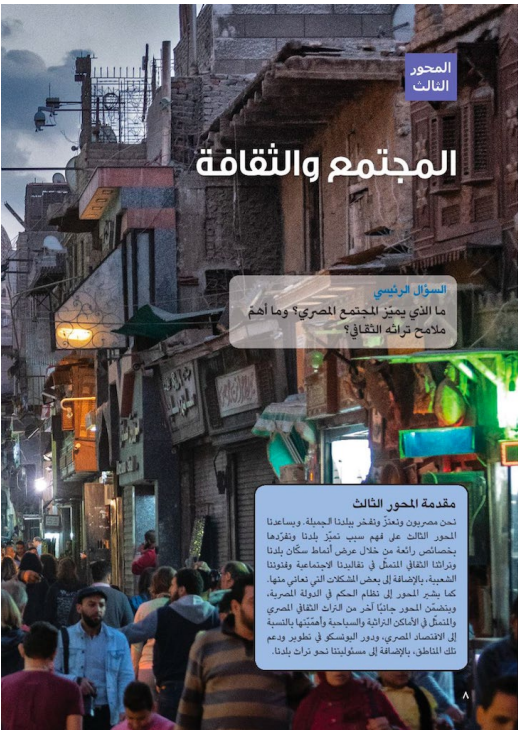


Fig. 17.5 Grade 4, Term 2 Social Studies Book, Module on Society and Culture. Ministry of Education and Technical Education, 2022, p. 8.

NM *Are the people who write the books from your team at National Geographic Learning?*

TK We have some people that write internally, and then we also have freelance authors. Some of them are based in Egypt, some are outside of Egypt, but all of them are professional writers who have worked with us in the past. We are in the middle of writing Term One for all four courses

for Grade 4 which will be introduced in September 2021. So, that is a lot of work. We are very serious about our photos. One photo can take like a week to find. That is great, but sometimes after you find something you have to switch it because you need to have the text box in a certain place, and it goes over a key part of the photo. It is a lot of work.

NM *Are you also developing the Teacher's Guides for these curriculums?*

TK Yes. We are trying to make it as detailed as possible. We want to make sure that there are specific instructions, like what the teacher should say to the students, what are some responses to expect, what kinds of things they might have to write or display on the boards. We try to get as much help to the teachers as possible.

NM *It is great to get an insight into what is happening in the kitchen. And personally, I am such a consumer of National Geographic materials and can only imagine that some of that would get into the hands of Egyptian kids in public schools. And as you said, with the visuals and so many other things like the kinds of topics and the aliveness of the content, it is only a fascinating prospect.*

TK Thank you for including me. I am happy to help whenever I can. I'm excited to see where this project goes (see Fig. 17.6).



Fig. 17.6 Tom Kelley, Cultural Expert for National Geographic Learning, 5 January 2021. Photo by Linda Herrera.

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18. Motivations for the Digital Transformation of Education: Interview with Ahmed Daher

Linda Herrera and Hany Zayed¹

Abstract

Ahmed Daher, Deputy Minister of Information and Communication Technology, has been at the forefront of the Ministry of Education and Technical Education's digitalization change strategy. He explains its four main components: it facilitates different approaches to teaching, studying, and learning; it enables learners and teachers to access different resources through online platforms; it constitutes a mega infrastructural project to connect all schools and classrooms; and it has a business and enterprise side since it generates demand for new goods and services and contributes to the economy. He emphasizes that technology is not an end in itself, but a means of getting people to where the government wants them to go.

Keywords

digital identity, electronic assessments, equity, gaming, impact, mega projects, operations, tablets, Samsung

1 This chapter combines two interviews: the first conducted by Linda Herrera with Ahmed Daher in September 2018, and a second one conducted by Linda Herrera and Hany Zayed on 30 October 2019.

1. Role in the Ministry



Fig. 18.1 Tarek Shawki (Minister of Education) demonstrates how to use a smartboard in a classroom as Ahmed Daher (far right) looks on. 20 February 2019, Port Said, Wikimedia Commons, CC BY-SA 3.0, <https://commons.wikimedia.org/wiki/File:Shawki-Daher-SmartBoard-FB-Feb20-2019.webp#/media/File:Shawki-Daher-SmartBoard-FB-Feb20-2019.webp>

LH As the Deputy Minister of Information and Communication Technology, what are your main responsibilities?

AD² I am heading the ICT (Information and Communication Technology) in the education sector. I am overseeing at least four different parts. My appetite just opens when there is innovation. First, I have a project to connect all the districts and the governorates. There are 50,000 schools with technology labs, and there is an ICT curriculum that is being taught. We are also distributing tablets to all students in Grade 10. I have to ensure there is an administrative process in place for all the ICT related parts (see Fig. 18.1). Second, I am working on the Learning Management System (LMS) which is part of the Egyptian Knowledge Bank (EKB). Third, there are a lot of activities involved in

2 Ahmed Daher is Deputy Minister of Education and Technical Education for Information and Communication Technology (2019- present as of 2025). For more information on Ahmed Daher’s professional background, see his LinkedIn page <https://eg.linkedin.com/in/ahmed-daher-ad2023> which lists his professional positions.

moving our administrative building to the New Administrative Capital and I am supporting the digital transformation of the Ministry itself. Fourth, I am pitching the Ministry the idea of having something like a 'smart card' or a digital identity for all teachers and K-12 students. This smart card would have all the information about the tablet and what it accesses, and a system for tracking and tracing electronic books to not have leakage. There are several projects along these lines.³

LH That is a big portfolio. Do you work with a large team at the Ministry?

AD Well, yes and no. I have a big team yes, in numbers, but not all of them are qualified to do the work. In my office I have 900 people, and I have 56,000 people reporting to me. Sixty of them are good, the rest are normal. They do not have the qualifications to do the technical things I need. I am trying with them.

LH Before taking this position with the Ministry, what kind of experience did you have?

AD I received my M.A. and Ph.D. from the Department of Computer Engineering of the Military Technical College (MTC) in Egypt. I was on the teaching staff there until retiring from the Egyptian Army in 2012 as Lieutenant Colonel. That is when I joined the president's office at the Arab Academy for Science Technology and Maritime Transport (AASTMT) responsible for strategies and projects. I also worked for Siemens Egypt for six years and have been involved in mega projects in the Middle East with Intel, IBM, Microsoft, Fujitsu, and Oracle. So, I do have different faces. I have worked between the government and the private sector.

3 The Ministry of Education and Technical Education's initiatives towards digital transformation are part and partial of the Egyptian government's plan, overseen by the Ministry of Communication and Information Technology (MCIT), for 'Digital Egypt'. This entails 'laying the foundations for the transformation of Egypt into a digital society'. See the MCIT website for details: https://mcit.gov.eg/en/Digital_Egypt#. See also the Education Sector Plan 2023-2027, section on 'Digital Transformation and Innovation (MOETE 2023: 82-87). By 2024, a total of 9,246 laboratories were equipped, 36,210 smart screens provided, and 27,439 classrooms upgraded in 2,476 general secondary schools (SIS 2024).

2. Distributing and Tracking Tablets

LH Everyone in Egypt is talking about the tablets. Can you tell us about the Ministry's decision to distribute tablets to all students in high school starting in Grade 10. At the other end, what happens to these electronic devices after students leave high school?

AD Let us start with the fact that the tablet is for free. Students do not pay money for it. They only pay the insurance part to cover damages. We are introducing a new system that requires this piece of technology for educational purposes. Due to social economic factors, we could not put the burden on students to pay for the tablet. As Dr. Tarek has explained, we are paving the way for a new electronic exam system which requires using the tablet. Also, the Egyptian Knowledge Bank (EKB) gives students the opportunity to access things they have never been able to access before; these were the triggers for the tablet. When a student takes the tablet, it is his (or hers) to use during the three years of high school, grades 10, 11, and 12.

LH How are the tablets distributed around the country?

AD They come from the airport to a storage area. We do a routine check for paperwork and then have batches that go to specific governorates. Each governorate distributes them to the district, and the districts deliver them to the school. The student must come to the school to sign some papers and then he (or she) can take the tablet.

LH After the student takes the tablet, is that the end of it?

AD Not exactly. That is what happens on the logistics part. But there is something else on the cloud-based side. A serial number is assigned to a student and then the tablet is activated. We install a piece of software to secure the device and ensure it can be controlled by the Ministry itself.

LH Do you mean there is a way to track the student activity on the tablet through the serial number?

AD Yes, exactly. There is a piece of software that allows me, or anyone with the password, to see a map of all the activities happening on the tablets throughout Egypt. It is also important to have a policy

that governs all the aspects of technology to serve the objectives of the business you are delivering. We have what we call Mobile Device Management (MDM). We put software inside the device that controls it. If students misuse the devices, we have a technology solution for this. During the three years when they are in custody of this tablet, we have control over it. We can turn it into a brick so it cannot be used, we can track it using GPS, we can push the applications that we have onto it. We can allow access, and we can deny access. This is what we did last year. We are still experimenting with which apps to open and which ones to close, because we are talking about teens. We are tracking patterns of how they use the tablet for things other than education.

LH With students in the millions, that is an enormous amount of data. How can you manage or monitor it?

AD Well, there is a software and a system for that. I have assigned people for each governorate. We are also recruiting a team from Samsung to help to offload the activities, especially during pressured times like during exams.

LH Where is the data stored?

AD Physically, it is distributed over several data centers with the main control in the data center in 6 of October city.

LH What kind of user behavior or data are you interested in tracking?

AD The part of the EKB I work on is the Learning Management System (LMS). The LMS is inside the EKB, and it is where we have publisher content from Wolfram, Britannica, and others. We want to see what learning materials they are using and how many of them are using the tablets. Last year, Grade 10 students downloaded twenty-eight terabytes of data from the tablets in the period leading up to exams. The downloads were spread across 500,000 tablets.

HZ Are students using the EKB actively during other times of the semester?

AD It depends on whether you are putting things in front of them. When the teacher tells them to go and seek information using resources on the EKB, they will use it. But for the new style of assessment in high

school (with different sorts of questions and electronic trial exams) they did not know how to study and had to figure it out. At first, we faced a lot of resistance. They were complaining a lot about the new system. They would say, 'What have you done? We do not know how to study. You are unfair (ظلمة). You ruined education'. But we were stubborn and waited to see how they would cope with it. We saw students logging on and entering the LMS. We are following the change management part. We, I mean Dr. Tarek, myself, and two or three other colleagues, do things that make people angry. But then they follow up and learn something.

HZ Will students have to turn in the tablets when they graduate?

AD No, after the three years, students can do whatever they like with it. When they receive the tablet, it is brand new. We are providing them with a high-quality tablet from Samsung, which won the tender from among five other contenders. They are high-quality end products with good support in the country. In Egypt, people try to extend the use of electronics for as long as they can. After high school they can use it for other purposes, or just sell it, or do whatever they would like. It is their property.

LH Have you considered using the tablet to teach students about electronic waste and the impact on the environment, or repurposing the devices for other uses?

AD From a project perspective, we are not concerned about the recycling of the tablets.

3. National Planning and Operations

LH You rolled out the tablets at scale across the country. In the planning phase, did you carry out a test rollout to a smaller group? How did that work?

AD We did it at the national level, and this is the hard way. Basically, there are two ways we could have approached it. We could have had a controlled environment, maybe within a governorate or a school. After you study the results, you do the rollout. Before coming to the Ministry, I used to work in mega projects where we did pilots and applied what we learned. Even with the best design on paper, in the end, there are still risks, problems,

and things you could not have foreseen. We still had to come up with ideas to overcome problems in real time. When you test something in a very controlled environment, you will miss a lot of the dynamics. You will not understand community dynamics in regions that are different from one another. You will not anticipate reactions which come from people with different mindsets, with different political and social influences. Another reason we did not pilot is because it can take up to six years to finally get to the point where you do the national rollout. So, we rolled out tablets in the craziest way, on a national scale. Yes, maybe we made mistakes, but this was a calculation we made. We knew some unforeseen things were going to happen. Our objective was to get the tablets in the hands of students. We knew that if we delayed it, it might not happen. We gained experience about things we never knew existed out there. We withstood a lot of pressure last year, but we kept moving along.

LH As the person overseeing the national rollout of tablets, what have you learned?

AD I have learned that operations are more important than doing the design and implementation. You can have a perfect design with all the partners contributing their part, you can have all the money you need, but the operation part is very important. There are dynamics with the people involved that you need to handle from the start, from the angle of technology, business, and psychology. That is the people part.

LH How do you handle the psychology, the 'people part'?

AD I will explain. We have different stakeholders. The technical people are trying to govern everything. The different companies work in their specific part of the system. In the schools, we have representatives, the techy guys who are solving tech issues in the classroom and dealing directly with students and teachers. Then you have the parents, because technology is a buzz thing, and everyone has an idea about how to deal with it. When we announced that we would provide students in Grade 10 with tablets, everybody was talking about the tablets being our great innovation in education. Can tablets be an innovation in education? No. Putting a tablet in the hands of the students is only one piece of a larger strategy for transformation. From our understanding, transformation is about people, process, and content. We are getting into high tech and

using pieces of technology with the right process and aims. People like to talk about the 'impact of technology' but I think this is missing the point.

4. The 'Impact' of Technology

LH Why don't you like people to focus on the 'impact of technology'? What do you prefer as an alternative way to talk about this digital transformation?

AD The 'impact of technology', is something we find in a lot in research. Actually, this is not the thing that should be measured. The educational change is what should be measured. You need to see what we are doing with the technology. We are planning to make the classroom a 'connected classroom', and this is not just a buzz word. We want to replace the blackboard in the classroom with an active panel, or a smartboard. There is a computer inside this panel, which is connected to the EKB. We are doing this as part of another pillar, the content pillar. Then there is the teacher pillar. With the EKB the teacher can access the LMS. The LMS contains not only the Study Guide and Lesson Plan but a lot of content we are adding related to the subjects. The content comes from publishers all over the world. We choose it according to our curriculum framework. What is the impact of using this type of technology? It is not just about the ease of using or accessing the resources. It is about how we are changing the role of the teacher. The impact is that we will be changing the role of the teacher more into a mentor, a coach.

Another example is when students bring the tablet into their homes, does this change their learning or impact their literacy? Last year during examinations, there were open book exams using the tablets. I sent our PR guys to shoot video in urban and rural areas in seven places, North Sinai, Arish, Matrouh, Monoufia, Port-Said, Luxor, and Cairo. We directly asked the students about how they were using the tablet. Were they sharing it with their siblings? Were they doing Google searches? From this we wanted to learn how the tablet is impacting their literacy, including their ICT literacy. They also talked to the IT guys and teachers at the schools about any problems they faced. A teacher in the countryside talked about how he used the smartboard and interactive screen. Then a student talked about how the exam on the tablet was stressful the first day, but he got used to it by the third day. They also did interviews in students' homes. In one village home they had a very small and old TV, and the phone was not even a smart phone. Now, they

have this type of high-tech device. We interviewed the father and asked him what he thought about this new system. He talked in a very good way about the need to be patient. We love that. There is an impact, yes.

HZ Do the students in these more remote places have access to the Internet?

AD Yes, we supply them with a sim card with a very cheap tariff for the data.

LH When you introduce something new into an environment, there are a lot of unpredictable things that can happen, which is why we need to research them. Take the teacher for instance. With these new technologies, whether apps, a Knowledge Bank, or devices, there are real concerns about teachers being replaced, bypassed.

AD But the kids have already been learning or discovering new things outside of the formal education system. With the tablet, we are following a pattern that has already been happening. The information they are getting is not just from parents or their community, it comes from online. When we were preparing for the tablets, people kept saying that students need training. I agreed and thought that within the student population, about 20% would be from very poor environments and would not even have access to the Internet or mobile phones. When I started visiting schools, I saw that almost all of them, even the poorest students, have mobiles. For the few who do not own phones, they have access to Internet cafés.

I will tell you something that surprised me. I went to a small village in a very distant area in Beni Suef, a very poor area. I sat with a group of very cute kids in Grade 4. I asked them a tricky question. I play games online, so I asked them, 'Does anyone here play FIFA?'⁴ Three of them, a small gang, told me 'Yes! We play it at Mohamed's shop'. They are using technology at this age, even if it is just games. They learn from the games. I have a son who is ten years old. He learns English from playing games. We have to understand how these kids are learning. It is not only through their schoolbooks and their teachers, but in many different ways. The point is that we are not trying to put something totally new. It is maybe new for us, but it is not new for the kids. What we need to understand is how to measure their cognitive understanding through these technologies. We have to learn the pros and cons of having

4 FIFA Soccer is an online multiplayer sports game produced by Electronic Arts (EA). See <https://www.ea.com/games/fifa>

technology in the classroom. France recently banned the use of mobile phones inside the schools.⁵

LH Some schools like the Waldorf schools (based on the educational philosophy of Rudolph Steiner) do not want kids to use any screens in the early grades and have a very cautious and incremental approach to technology.⁶ This is to say there are different educational and pedagogical approaches to technology in education.

AD Oh wow, interesting.

5. Localizing Industry

AD There is another dimension I want to raise about ‘impact’ which is the impact to industry itself. In a two-year period, we spent roughly fifteen billion EGP in Egypt. We put this money directly into the market, into companies. The local companies made about three billion EGP, which is a lot for Egypt’s ICT sector. To do the ICT upgrade in schools which required installing cables, the network, things like that, we worked with five hundred companies. This work has had an impact on local business. For example, when I was in Mansoura, I heard a guy say, ‘When I asked the electrician to fix my lamp, he said he could not do it, he was just working on the school project’. So, this is another impact. This is a mega project that has affected the economy in certain ways and brought innovation with it. We should look at what we are doing from this angle. Another important thing we are doing is trying to localize the production of the tablet in Egypt. We have over twenty million students and if you do the math, millions will need tablets over the next five years. We thought we could have facilities right here in Egypt to manufacture them. This will bring jobs, innovation, and opportunities to industry, specifically the ICT sector in Egypt.

LH When do you expect local production of tablets in Egypt to begin?

5 In September 2018, the French government banned students from using mobile phones in schools. The ban was applied from kindergarten to Grade 9 (Le Figaro 2018).

6 The Waldorf/Steiner schools delay children’s use of electronic media and digital tools according to their developmental stage, based on cognitive development theory of Lev Vygotsky and others (Neumann 2024).

AD We put out a tender and are talking now to Samsung. The Chinese were on the table, but they withdrew their proposal, they were not able to do facilities in Egypt. We will finalize an agreement by the end of this year or the beginning of next year (2020)⁷ (see Fig. 18.2).



Fig. 18.2 Prime Minister Mostafa Madbouly (center) visits Samsung Factory in Beni Suef, Egypt, 18 May 2024, Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Samsung_Factory_in_Egypt.jpg#/media/File:Samsung_Factory_in_Egypt.jpg

HZ *I am thinking of the ripple effects of education technology. In a recent interview, Dr. Tarek talked about how he wanted the Ministry to build five*

⁷ In February 2022, Egypt signed an agreement with the Korean owned Samsung Group for a total investment of \$30 million 'to localise the production of tablet devices required for the Egyptian educational process' by building a Beni Suef factory (MCIT 2022a). Tablets would have a 'Made in Egypt' seal (Alahram Online 2021). As of 2024, the Samsung factory includes production lines for televisions, mobile phones, and tablets, producing 6 million units annually. Samsung International aims to make Egypt a regional center for production and export for the Middle East, Europe and Africa ('Made in Egypt' Facebook page, <https://www.facebook.com/photo/?fbid=871487585013538&set=a.660240456138253>).

*technical schools to train people who could work in manufacturing, whether in the Samsung factory or somewhere else.*⁸

AD Exactly. There are a lot of jobs and different roles. They are not just in manufacturing. We will also have jobs in maintenance and support. And not only for the tablet (as hardware), but the software of the tablet. There are different local companies that can help in developing applications. In high school alone (Grades 10-12) we have about three million students, not to mention the teachers. Small entrepreneurs and companies can come up with ideas for apps that we can install on the tablets of the high school students and teachers. And once we introduce tablets to middle school (Grades 7-9), it will increase the opportunity. I mean, it is like you have unexplored land with a lot of opportunities for building.

6. New Business Models for Private Tutoring

LH Are these new tools and electronic resources in the hands of the students having an effect on the private lesson industry?

AD We made a study and found that between 1.6 billion USD to 1.8 billion USD are being spent every year on private tutoring and associated costs. This includes the lesson itself, the external books, and the cost of transportation. This is money that we do not control and that does not help the country. It would be very hard to close all the centers or stop whatever means students are using to educate themselves. Instead, we can take a share of this sum and make sure the tutoring is taking the right approach. Private tutors should be teaching students to understand, not to memorize. They should help to make these kids good candidates in the workforce. Dr. Tarek came up with this idea of trying to regulate the private lessons by being a part of it.

So, even though we are not trying to overcome this phenomenon of private tutoring, we need to find some ideas to disrupt all of that. We will provide the private tutoring ourselves. We will innovate a marketplace

8 By 2022, seven WE Schools for Applied Technology from Samsung Innovation Campus in coding and programming were functioning, under the auspices of the Ministry of Communications and Information Technology (MCIT) with the Central Administration for the Development of Technical Education and funded by Telecom Egypt as part of its social responsibility initiative. These schools represent Egypt's first ICT vocational schools, with six-month training programs. They are located in Cairo, Giza, Alexandria, Suez, Dakahlia, and Minya (MCIT 2022b).

and use the technology we are already providing. What we are doing now is building studios. We are developing something like an iTunes for lessons. This is like an app where a teacher, using high-tech tools, will give a single lesson in a given subject. The teacher will be equipped with the methodologies from the new framework, the content from our LMS, and the technology so that every student that has a tablet can access this right away. Instead of paying 100 LE per lesson, he will pay something like 5 pounds or 10 pounds per lesson. The video lessons will be on a platform like Netflix.

HZ Will you have a subscription model?

AD We might offer a subscription or a package per lesson. We can leave it up to them. We predict that up to 50% of the population will opt for these services. And we will split the revenue with the teacher who does the lesson. Teachers in different governorates can participate, so this is a way to distribute the revenue. The main part now is that we are using the technology, we have the platform, we have the LMS, we have the tablets, we have the studios, and our own studios (see Chapter 22 in this volume).⁹ Teachers can film their lessons in our state-of-the-art studio. This is how we bring lessons of high quality production to the masses. What we still need to do is develop the apps, an app like Netflix.

LH A problem with this model might be that it will bring a new kind of competition between teachers.

AD No, this is not a problem. What this will do is to kill private tutoring. The competition is a way to see who is good based on the ratings, who the people are buying more. You should be qualified to enter the marketplace. And you need training and certificates for that. So, this helps to solve another problem, the teacher problem that we have in Egypt. We need to filter the good ones from the bad ones. We need to find ways to try to increase teachers' poor salaries. We need to have incentives in a decent way.

⁹ UNESCO announced the opening of 'The Educational Content Studio' on 1 April 2024 at the Professional Academy of Teachers. The studio is part of the UNESCO-Huawei Technology-enabled Open Schools for All Project (UNESCO 2024). See also UNESCO's Global Education Monitoring Report on Technology in Education which addresses 'the use of technology in education around the world through the lenses of relevance, equity, scalability and sustainability' (UNESCO 2023).

LH This leads us to the EKB project, which is open and free of charge to all Egyptians. But it is not a free project since the government has to pay for subscriptions from over thirty publishers. How does that work?

AD The EKB has its own business model. The secret to making this work has to do with the negotiations with the publishers who put their content there. This is the magic here. This is an integrated innovative model from the business and legal perspective because we are dealing with copyrighted material. It is hard dealing with British, American, Indian, and other publishers using one quote, and I am talking economics here, I am talking the business side, not the technical side. This is very hectic, and all the credit should go to Dr. Tarek because he managed to do this by himself (see Chapter 4 in this volume). And I need to point out the big difference between the EKB and other 'free' services. It is not Google Scholar, for example, where you can search for a paper and access to it. And it is not Wikipedia. It is also not the Khan Academy, which is totally different from the EKB. I used to be a researcher and faced a lot of barriers to just access documents, scholarly articles, because there was no EKB when I was doing my research.

LH What was your area of research?

AD Computer engineering, artificial intelligence. I spent a lot of money to do this kind of research. So, for a researcher the EKB is good. However, it is not only meant for researchers. It needs to be advertised for what it is, and how it is different from sites like Wikipedia or Google Scholar. We are working on that.

HZ Are you planning to expand the EKB to be like an Arab Knowledge Bank or an Africa Knowledge Bank?

AD From a technical point of view it is possible, but from the business side it is more difficult. We need knowledge really, but this also needs investment. I am sorry to say that many countries do not see the value of the Knowledge Bank. Dr. Tarek has negotiated very good deals for subscriptions, but other countries would have to pay the publishers to access them. That is one thing. The other thing is that some countries think it is okay to just have Google or Microsoft. Or they are satisfied with having the Internet to access things like Khan Academy. Some

people think they can get their knowledge from Facebook and do not need something like the Knowledge Bank. When you talk to highly educated people and researchers, they understand that the Knowledge Bank offers a different standard. But others do not understand its value and do not realize that they need this.

7. Postscript

Ahmed Daher continued to lead digital solutions in Egyptian education. From 2021-2025 the MOETE developed VibeOps, a ‘100% Egyptian-designed AI-powered infrastructure management platform that [...] exemplifies Egypt’s commitment to technological sovereignty and digital independence’ (Daher 2025a) (see Fig. 18.3). Under his leadership, the Ministry also launched ‘Faheem: An Intelligent Framework for Adaptive and Personalized Learning’, an initiative designed to ‘revolutionize K-12 education in Egypt with adaptive AI, inquiry-based learning, and a robust knowledge graph-based platform, all aligned with the national curriculum and global educational standards’ (Daher 2025b and Daher and the Faheem Team 2025).



Fig. 18.3 The Resilience of Egypt’s Education Digital Ecosystem, Wikimedia Commons, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?title=Special:ListFiles/EducationMENA&ilshowall=1#/media/File:Digital_Egypt_2025.jpg

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19. Coordinating the State's Knowledge Project: Interview with Mahmoud Dawoud and Mahmoud Hussein

*Linda Herrera*¹

Abstract

The Egyptian Knowledge Bank was established in 2016 as the largest knowledge platform in Egypt. It contains portals for the general public, K-12 learners and teachers, and researchers. The government commissioned the private company LIMS to handle its coordination and technical support. Mahmoud Dawoud, Marketing and Training Director, and Mahmoud Hussein, the Managing Director, explain how the platform has evolved over the years. They detail their initiative to index all Arabic language journals including ones from al-Azhar university, and the subsequent increase in university rankings. The challenge of a knowledge project is that it requires constant updating of materials and regular outreach to the public so that more users, and by association the society, can reap its benefits.

Keywords

Arabic journals, indexing, learning outcomes, higher education, ranking, scientific research, training

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- 1 This interview took place on 1 March 2020 in Cairo. Special thanks to members of the Education 2.0 Research and Documentation Project team Abdelhamid Mahmoud, Nairy AbdeIShafy, Ahmed Alaa, and Mostafa Hanafy for their contributions to the questions, background research, and filming of this interview, and to Heba Shama and Hany Zayed for transcribing and translating the interview which was conducted in Arabic. Highlights of this interview are available on the Education 2.0 YouTube Channel at <https://www.youtube.com/@education2-Egypt/videos>

1. The Origin Story

LH Let us start with a very simple question. What is the EKB?

*MD*² Simply put, the EKB is one of the biggest knowledge projects in Egypt. The EKB is much larger than a digital library because it provides many services, has a vision to support education, scientific research, and the spread of sciences throughout Egypt. The EKB has one website, www.ekb.eg, with four sub-portals that users can register for and use: the first is for general readers; the second serves the academic and research sector within Egypt; the third is for K-12 students; and the fourth has general materials for children aged 6-12. We need our society to return to loving culture and reading. The truth is, we have been missing those things on television. The Egyptian Knowledge Bank lets people access knowledge about things they are excited about and pursue their passion (see Fig. 19.1).

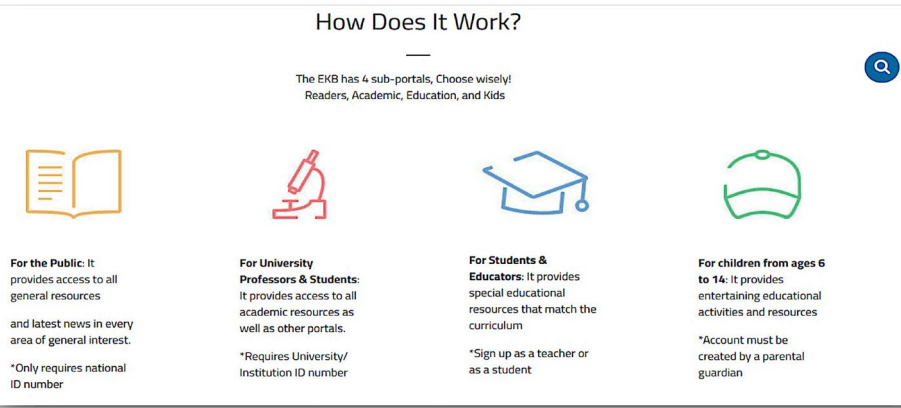


Fig. 19.1 The four portals of the Egyptian Knowledge Bank.

LH Can you take us through the journey of how the EKB came into existence.

MD It formally started in January 2016, under the auspices and vision of President Abdel Fattah El-Sisi. The idea goes back to Science Day on 13 December 2014, at an event called ‘Towards an Egyptian Society that

² Mahmoud Dawoud (MD), Marketing and Training Director at LIMS Egypt.

Learns, Thinks and Innovates'.³ This was the start of three projects: an ICT Competency Framework for Teachers; establishing a presidential leadership program for youth; and having some kind of Knowledge Bank.⁴ The Knowledge Bank was needed because for the past thirty years, electronic resources were only available through Egyptian universities or large public libraries. They were mainly for researchers and a small number of general readers. Scientific articles were behind paywalls and people could not afford them. Around five years ago, we started seeing problems with how academics and other learners were selecting electronic sources and science materials.

MH⁵ The project was a way to automate the work coming from faculties of science in national Egyptian Universities. In 2015, we met Dr. Hoda Abu-Shady, Professor of Nuclear Physics at Cairo University at an event at the Greek Campus of The American University in Cairo (AUC). Her idea was to bring together all university science departments under a single portal and start digitizing their research and scientific output. His excellency Dr. Tarek Shawki, then Chair of the Specialized Presidential Council for Education and Scientific Research, added that we should do it as a complete bouquet of publishers in different fields. This would enrich research in different specializations in Egyptian Universities and give researchers a chance to have access to quality research instead of depending on the Internet.

MD We found that Dr. Tarek Shawki had a bigger vision. He said we needed to do something that would support not only higher education, but also basic education for any Egyptian child who is passionate about science and knowledge. We needed credible sources, not the kinds of unreliable things you find on social media. We know that children are watching more YouTube at home and playing games on smart devices. We thought we could offer educational applications and games with much loved children's

3 'Towards an Egyptian Society that Learns, Thinks and Innovates' is the branding for an initiative that came out of President Abdel Fattah Sisi's office in 2014. It has been consistently used as the branding for the different state-led knowledge projects. In 2019 for example, the Ministries of Education and Higher Education held an Egyptian Knowledge Bank event to commemorate four years of strategic partnerships (see PR Newswire 2019).

4 See 'What is the EKB' from the EKB workshop (EKB 2017).

5 Mahmoud Hussein (MH) Managing Director, LIMS Egypt.

stories in Arabic and English that foster moral values. We have developed good relationships with many publishing houses over the past twenty-five years. They came and met Dr. Tarek Shawki and Dr. Hoda Abu-Shady and nine other people, all professors, from different specialties around the country. They started getting price quotations according to the type of content, whether on a perpetual basis that you pay for just once, or content on a subscription basis which gets renewed every year. The government needed someone to help guide the process, and they chose us.

LH How did your company LIMS get selected to oversee the Knowledge Bank, a governmental project?

MH Our company (LIMS), which started operations on 1 January 1995, was originally specialized in online access, something that was not in vogue at the time.⁶ We took a big responsibility upon ourselves. At that time, a CD-ROM could hold around 200,000-300,000 pages and was operating on a stand-alone system. This changed to a client server architecture, and then online. When the government issued the call for a company to work on the EKB, it received many direct bids, local and international. The only bid they were comfortable with was ours because we did not put prices. Our offer was purely technical and statistical. They said, 'Come and help us, and if you succeed, we will make you the main deputies as technical specialists'. And thank God, we started working on this in June 2015. We said we wanted to take this on to help to spread knowledge, not to gain profit. We made a commitment to be the middlemen and needed to be honest in those deals. Thank God, they have been renewing us automatically for five years now. This has given us experience. My partner Mr. Mahmoud Dawoud and I have been travelling, and things are going well.

We started building a very big team because the state thinks big. They do not have staff for the EKB, or a dedicated budget to pay employees. They work horizontally, meaning that each publisher is responsible

6 The mission of LIMS, according to its website, 'is to empower the global research community by pioneering the creation of cutting-edge digital libraries, fostering a seamless integration of technology to enhance the accessibility and impact of scholarly publications. We are dedicated to revolutionizing the way knowledge is shared, ensuring that researchers, academics, and institutions worldwide can effortlessly navigate the digital landscape for the advancement of human understanding' (<https://limsegypt.com/about/#vision>).

for the content, the training. We handle the coordination and technical support for the EKB. Even the data center comes from the Egyptian National Scientific and Technical Information Network in the Egyptian Academy of Scientific Research and Technology (ASRT). They donated the data center because it is a public sector entity which oversees the infrastructure. These were the best people to take care of and nurture the data center. They paid millions of pounds for communication equipment and infrastructure, in addition to the solutions that we used (see Chapter 20 and Chapter 21 in this volume).

MD The participation of the private sector can serve the state to a big extent. The private sector can help governmental projects to succeed.

LH How do you create a secure system that anonymizes users and protects national data?

MH Security was a big issue from the start. The Academy (ASRT) did not want publishers to know the scientific research direction of users in Egypt. This was an opportunity for us to secure the national system. Content suppliers from Elsevier, Springer Nature, or other big companies normally track the direction of scientific research. For example, if I access four articles in physics or chemistry from a journal, this is known to the publisher. But in our system, the publisher does not have the capability to know the name of the researcher and can only see a token number and typology. When I sign on to a system like Google, the search can be exclusive to Egypt, or geofenced. A publisher can see only a token number but does not know the name or the academic department or the researcher (see Chapter 20 in this volume).

2. The EKB in K-12 Education

LH Tarek Shawki has said that the EKB is not just a digital library, it is an ecosystem. Can you explain to us how the EKB made this transition from being a digital library to an ecosystem?

MD What is happening in Egypt is not an education reform, it is a transformation to a new educational system. As of now (2019) this new educational system, 'Education 2.0' has been applied in KG1, KG2, and Grades 1 and 2. At the same time, there is also a reform of the old system,

and this is particular to high school where all students entering Grade 10 receive a tablet. EKB partners provide a huge number of international resources for K-12 based on international criteria and standards. They are helping the Ministry prepare the general framework for the new curricula. Those companies or publishers such as Encyclopedia Britannica and Discovery Education, write up learning objectives based on the learning outcomes set by the MOETE, all according to international standards. This will lead us to reaching a good international ranking for Egyptian public education.

MH Each publisher signed a protocol with the MOETE which includes details about the learning objectives. Publishers provide digital content to meet learning objectives for each subject—the sciences, mathematics, biology, chemistry, physics, and the social sciences. We have something technical called ‘sandboxes’. Every publisher has content in a unique sandbox. Discovery, Britannica, Pearson, York Press, Nahdet Misr, Wolfram and others have their own dedicated sandbox. When the student does a search, the system automatically accesses all sandboxes and retrieves the relevant objects and topics. The state also partnered with Nahdet Misr to build more than ninety-five textbooks in a digital format. There is also a process for how to tailor the publisher content for use in Egypt which is different from many African and Arab countries that take the content as-is. Dr. Tarek and others refuse this idea totally. Publishers have to maintain and constantly update and upgrade their contents according to the agreement. This enables Egyptian students and teachers to have access to high-quality, easily understandable content. This system also helps decision-makers in Egypt to cancel printed books. We heard recently that books for Grades 11 and 12 will not be published in print format. Also, after the state mapped the sector needs it formed a partnership with Pearson Education, a giant publisher that is professional in online grading solutions.⁷ Their systems allow papers to be graded without any human intervention.

MD As you surely know, this is a big and ambitious project that seeks to change or create an educational system for twelve years.

7 On Pearson’s tools for automated scoring of educational assessments, see <https://www.pearsonassessments.com/large-scale-assessments/k-12-large-scale-assessments/automated-scoring.html>

MH Strategically, the state cannot build the whole system in one go. It needs extensive professional development and teacher training, which is very exhausting. They will do this in stages, as the new curriculum is rolled out. Nahdet Misr and Discovery are providing training for the areas of the curriculum covered by their books (see Chapter 14 and Chapter 15 in this volume). We also support a lot of specialized workshops to help teachers absorb new educational and teaching strategies. Teaching should be based on understanding, not memorization, it should foster participation in the classroom between students. Really, the vision is totally new. When I was in school, they always told me not to deviate from the schoolbook, to only use the textbook. Now, students are doing projects that require that they use a lot of different sources.

LH *Can you explain the Learning Management System (LMS) that is housed in the EKB platform?*

MD The LMS was designed based on the needs of the MOETE. It did not start with the EKB. The good thing about the LMS in Egypt is that it will eventually serve over twenty-two million students in more than 50,000 schools. The LMS is also connected to medical education in Egypt. The Prime Minister decided to apply it in Ministry of Health for a number of medical boards and Egyptian fellowship students. It will be a big addition to the Ministry of Health.

MH I want to add that the EKB provides professional services. There is another team that helps us with leadership programs for thirty model hospitals. Hospital leaders, either managing directors or resident managers, have been trained on modern scientific educational processes in managing hospitals. The EKB is also responsible for such activities.

3. Using Analytics

LH *Mahmoud Dawoud, you have talked about how the field of analytics is the future. Can you explain this in relation to analytics on the EKB?*

MD Of course, the LMS has grand goals when it comes to data. Data will provide the ability to know which governorates use it more, which schools use it more, and which teachers are able to motivate their students to use digital resources. It tells us which resources students

are not using, if they need training, and if we need to change those resources. It gives daily and continuous statistics to the decision makers so that they are able to see the educational process picture clearly.

MH When we first began the EKB in late 2016, we participated in Alexa Analytics, a subsidiary of Amazon.⁸ It has a very high rating and serves more than thirty million websites and portals throughout the world. We sat with Majed Al Sadek who is the datacenter administrator and heads the Egyptian National Scientific and Technical Information Network in the ASRT (see Chapter 20 in this volume). According to Alexa Analytics, in the EKB's first year, our rating was 60% and we had more than 184 problems. When it launched, the EKB was ranked 25 million out of 30 million websites. Today, three years later, we are ranked 267,000 from 30 million, and this is something official, not coming from us. These statistics are available online every week and we are allowed to download them. From the 184 initial problems that we had, we now have only nineteen problems, and we have been able to solve most of them. We improved the portal and worked to improve the SEO (Search Engine Optimization). On the other hand, we reached 1.6 million users on a daily basis and have more than eight million hits every day from general users and students.

MD With regard to analytics, of course you know that a big problem is lack of information. When information is available, it becomes the tool for decision makers to reach the right decision. From the beginning of the EKB, analytics have been foundational. We monitor usage statistics to make decisions to improve access, the user experience, and the interface. I am really interested to know what interests the readers and the sources they use. We want to know, for example, if sources in Arabic and English are enough? We look not only at the national level, but at each governorate. We see which governorates need more support, training, and materials. We use this information to design the social media campaigns. We need this data to do our job effectively.

MD I want to follow up on the number of users because it can cause some misunderstanding. Registered users can login to the EKB from

8 The Alexa Internet, Inc., a subsidiary of Amazon, provided web traffic data and rankings on over thirty million websites globally. It was formally shut down on 1 May 2022 (Vincent 2021).

anywhere at any time on the Internet within Egypt, such as from a university or the military or in the many places of higher education. Academic spaces in Egypt have an official Internet range that is registered on our servers. That is why the number of people logging on the EKB every day is over a million. We have surges before the exam period, during exams, and during the competitions we conduct on the EKB that target school and university students or general readers. We found that when we had a competition, the usage increased on average more than 200%. That is why you will constantly find announcements for competitions from different partners.

LH Where do you see the highest user numbers by governorate? Is it Cairo?

MD It is not fair to compare other governorates with Cairo, because it has by far the largest population and the highest number of students, schools, and universities. But of course, the surprises for us are the places we do not expect usage to be on par with Cairo. We find, for example, that governorates in Upper Egypt are among the biggest users of the EKB, both in basic education and higher education. So, we cannot compare Cairo because of course it will be larger, but the surprise lies in places where we expect usage to be less.

4. Ranking Egyptian Universities

LH One of the goals stated in Egypt Vision 2030 is to improve the international rankings of Egyptian Universities. How does the EKB serve this objective?

MD We need analytics for the rating system of Egyptian universities. A big part of evaluating and ranking universities comes from information about researchers and publications, hours worked, and a host of other things. Actually, the EKB has greatly contributed to supporting the technical capacities that produce the statistics to improve our university rankings. This has been a part of the work that we are doing.

MH Following up on what Mr. Mahmoud said, the scientific research output in Egypt comes from fifty-seven different publishers, but we did not have accurate statistics before to track them. Now, the EKB has a centralized open access publishing portal that includes 400 Egyptian journals in Arabic and English. This was an initiative by the state and is

open to the world. You can fully download articles from it. For example, in the past four years, people from more than 180 countries accessed 400 journals and downloaded 6.5 million articles in English and Arabic from Egyptian journals. The biggest numbers came from Israel, Turkey, Arab and African countries, Canada, the US, and Australia.

MD Up to now, ninety-six journals with the latest scientific research from academic and scientific institutions are accessed globally are in Arabic. The rest are in English. The numbers are increasing daily. We should especially mention the journal, in Arabic, of al-Azhar University which is known as the beacon for Islamic Studies around the world. Before, publications from al-Azhar were not visible enough to the world. The EKB changed that. Now, anyone can access the journal and use the information anywhere around the world. We are currently indexing all journals in Arabic from all Arab countries with the Arab Index for Reference Certificates (الكشاف العربي للشهادات المرجعية). This is an ambitious project by the EKB. We are doing this in cooperation with Clarivate Analytics.

MH We use the same standards and criteria as the Web of Science, one of the most important citation analysis systems of scientific journals in the world. This ambitious project was in conflict with a certain unnamed Arab Country, but Egypt was able to ultimately adopt the idea and the publisher made an official contract through the Egyptian government last year. Egypt gets royalties for twelve years. So, thank God this was one of the best projects, and we have it on a perpetual basis. We are now close to publishing the first Arabic database worldwide (2020) under the Web of Science for 35,000 Arabic articles from all the Arab countries, not just Egypt.

Additionally, for the fourth year in a row, Dr. Tarek has coordinated an annual event with Leiden University in the Netherlands, one of the most important universities in bibliometric analysis. This event includes courses for three days. We participated for two consecutive years with a total of twenty-four universities and around seventeen Egyptian research institutes. This gave them the chance to upgrade the ranking system within their universities. Research institutions are learning how to invest in research and have a monetary and scientific return for the country.

MD More than nine thousand institutions around the world can see the outputs of Arabic scientific research and will be able to see the bibliographic details both in Arabic and English. This is the first international database to do this.

MH The texts we use about the Arab world usually come from foreign sources. Professors and universities do not have enough Arabic sources. To reach a political balance worldwide, we need sources and research from Arabic or Islamic culture. This is essential. So, thank God those are basic things we are doing.

5. Challenges

LH *What are the main challenges you face with managing the EKB?*

MD We have been facing challenges every day since we began. The first thing is that we are working in a knowledge project, which is different from working in food or cinema. A knowledge project means constantly accumulating material, and it is about behavior that changes society. These goals need time. We had a meeting with the President in November 2015, and he said himself that they know this project could take many years to reach all its objectives.

Another point is that the EKB is supposed to have content from all local entities within Egypt. We have a problem with integration because not everything exists in a digital format. And for materials that are digitized, they are not always in a format compatible for integration. This is also true for the many sources we have in Arabic from across the Arab world. The EKB team is making huge efforts with the technical teams, but this of course needs a lot of time. But thank God, the technical team is highly trained and has the technical capabilities to overcome those issues.

Another problem we face is marketing the EKB on television which is very expensive. TV channels charge hundreds of thousands of pounds for each second aired, which is very difficult. We get charged as if the EKB is a for-profit entity, which it is not. It is a non-profit entity that provides services for all citizens for free. Rather than spend money on very expensive TV ads, we use our resources to do more workshops, acquire

more content, and train people. The Egyptian TV needs to do awareness campaigns about the EKB at no cost, just as it does for hygiene or health.

6. Bibliography

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7. Companion Videos

Video 19.1 'The Egyptian Knowledge Bank (EKB) - Digital Learning Future', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 1 March 2020, YouTube, <https://www.youtube.com/watch?v=DmHIWZcO5vk>

Video 19.2 Mahmoud Hussein and Mahmoud Dawoud: 'Origins of the Egyptian Knowledge Bank', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 1 March 2020, YouTube, <https://www.youtube.com/watch?v=KMIjuHQjbzg>

Video 19.3 Mahmoud Dawoud: 'How to Use the Egyptian Knowledge Bank', Education 2.0 Research and Documentation Project, 1 March 2020, YouTube, <https://www.youtube.com/watch?v=3xXJSbs-pMo>

Video 19.4 Mahmoud Hussein and Mahmoud Dawoud: 'Role of the Egyptian Knowledge Bank in Egypt's New Education System', Interview by Linda Herrera, Education 2.0 Research and Documentation

Project, 1 March 2020, YouTube, <https://www.youtube.com/watch?v=03LPmCaYsrY>

Video 19.5 Mahmoud Hussein and Mahmoud Dawoud: 'Arabic Publications and Rankings on the EKB', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 1 March 2020, YouTube, <https://www.youtube.com/watch?v=WkkISY8lfyw>

Video 19.6 Mahmoud Hussein and Mahmoud Dawoud: 'Data & Security on Egyptian Knowledge Bank', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 1 March 2020, YouTube, https://www.youtube.com/watch?v=qzb-t3p_Qi8

20. The Dream of Developing a Knowledge Bank for All: Interview with Majed M. Al Sadek

*Linda Herrera*¹

Abstract

Majed Al Sadek, Head of the Egyptian National Scientific and Technical Information Network (ENSTINET), used to think that the idea of a knowledge bank that would be freely available to the entire country was an impossible dream. The establishment of the Egyptian Knowledge Bank (EKB) in 2016 was possible through a unique set of collaborations and commitments from different government ministries, agencies and centers, publishers, technology platforms and companies, schools, and end users. Experts working on the platform are vigilant about data security and are constantly looking for ways to redress digital inequality and financing of the project. Al Sadek asserts that the EKB has forever changed education in Egypt with far reaching implications for the region and beyond.

Keywords

copyright, digital security, distance learning, intellectual property rights, K-12 education, higher education

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- 1 This interview took place on 15 April 2020 via Zoom. It was conducted by Linda Herrera in Arabic. Many thanks to members of the Education 2.0 Research and Documentation Project team for their contributions, in particular Nelly El Zayat for help in organizing the interview, Hany Zayed for supporting with background research and questions, and to Nairy AbdElShafy for transcribing and translating the interview.

1. Early Stages of the Egyptian Knowledge Bank (EKB)

LH Can you introduce yourself and give some background on the Egyptian National Scientific and Technical Information Network (ENSTINET) which you head?

MS² I am the head of the Egyptian National Scientific and Technical Information Network (ENSTINET) which started in 1982. It is the national information network. This was a USAID project, and after five years it became self-sustaining and was adopted by the Egyptian government. It then became affiliated to the Academy of Scientific Research and Technology (ASRT) at the Ministry of Higher Education and Scientific Research (MHESR). Since then, we have been serving the community of science and technology in Egypt. We are even serving the K-12 education sector now. Currently, my role at the Egyptian Knowledge Bank (EKB) is more in IT. It's as if I am the EKB IT Manager, if we consider the EKB as its own individual entity.

LH How did you get involved with the Egyptian Knowledge Bank?

MS When the Knowledge Bank project was coming to life, I was attending a meeting at the Frankfurt Book Fair in Germany and met Dr. Tarek Shawki who was also there. He talked about his vision to reach out to a larger number of researchers, which was very promising. Before, researchers were affiliated with certain research institutes within specific universities and had access to a very small number of databases and subscriptions. It was nothing like the wide scale that exists now. To try and work on something like the EKB was a dream for us. We started to collaborate with Dr. Tarek. ENSTINET made resources available to host the EKB. We provided hardware and software, logic and search engines for user ease, and the interface. We worked with Dr. Tarek to think about how to integrate the research centers, an area where we had experience.

LH What is your main role at the EKB?

MS My role at the very beginning was to contribute to the architecture section of the portal itself, to work on how to build the portal and make

2 Majed Al Sadek is Head of the Egyptian National Scientific and Technical Information Network (ENSTINET).

it more appealing to a variety of users. We are talking about general readers, students, parents, not just scientists or academics. We designed it to be divided into four sub-portals (the Public, University Professors and Students, Students and Educators, Children Ages 6-14) (see Fig. 20.1). I might have played a role in this.

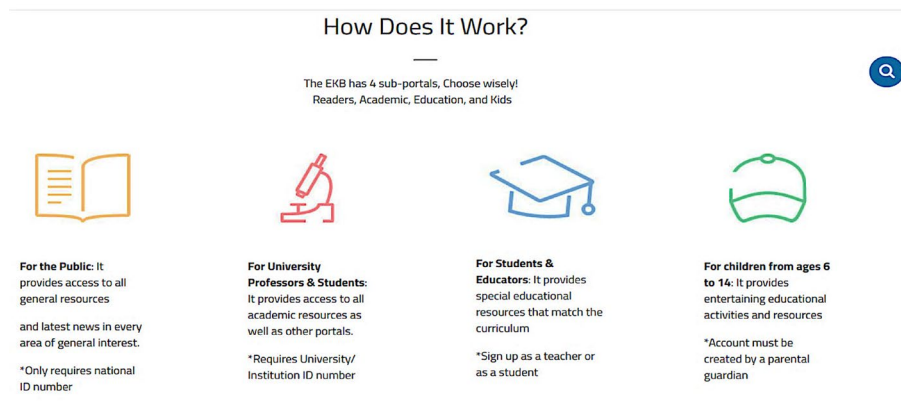


Fig. 20.1 The four portals of the Egyptian Knowledge Bank.

Afterwards, the role started evolving to be more about the technologies that would operate it. And here I mean the technologies in terms of application layers that would serve this service, and the hardware platforms that could dynamically grow and be able to address more users on demand. My role started to transform more to the project's IT part, maybe because originally my background is in IT. Now, we are working on integrating other publishers onto the platform. We help to integrate the legacy platforms that exist in the different ministries. We see how we can digitize their learning resources and help with new agreements and alignments. My role started transforming from working more in the IT side of things, to working more towards consultation. Of course, I have a large team with me.

2. Expanding the Platform to Include K-12

LH The original concept of the EKB was to serve researchers at the higher education level. Did you imagine it would grow to play a central role in supporting K-12 students? How did that develop?

MS When we began in 2016, we did not dream that we might reach where we are today. At the time, we had a very limited number of users. Our efforts were focused on the researchers. The portal had a second group of existing sub-portals, but we were timid. We discussed whether we should support general non-specialist users with a passion for the sciences among K-12 students. But we were not convinced that these students and their parents would actually access the Knowledge Bank. It was as if we were discussing something from our ivory tower, something very utopian. Every time I attended a global meeting with a national research and education network in the USA, Canada, and Europe, they talked about something called 'Children's University', where they connected several schools to national research and education networks. To us, that was a farfetched dream. We never imagined that this could happen here in Egypt.

Last year (2018/2019), after the distribution of tablets to all of Year 10 which has around 700,000 students plus their teachers, they started logging on. We had an approximate capacity of around 800,000 users at the time. We have since created upgrades and work in different ways with hybrid clouds. Thank God we have been able to serve this community as it grows. This year (2019/2020), Grade 11 joined and that doubled the numbers, meaning we added nearly 1.4 million users in two years. Keep in mind that more grades will be joining. One of our main concerns has been to protect personal data and sensitive information from being exposed to overseas corporations. This will always be a concern. We found a local solution. We started taking some resources from public clouds and ensured the data does not contain personal information. Honestly, we have been working more dynamically.

LH Did you have to make design changes to the platform as more pre-tertiary students came onto it?

MS Initially, we created a separate sub-portal for children because we did not have specific targeted content for the early years. Now, with Education 2.0., the educational curricula itself has changed and been updated with the different publishers. There is even content for K-12 students on the study platforms. Maybe they are the luckiest ones, to have this resource from when they start school. In truth, it is thanks to Dr. Tarek who within two years of him taking his position at the

Ministry, made the Egyptian Knowledge Bank play a key role in our education. Today, over 3,000 secondary schools are connected through fiber connections to the same data centers as research institutes and universities in Egypt. They all share the same resources in terms of materials from many different publishers. We could never have imagined this ecosystem existing so quickly and becoming a reality in two years. This was a faraway dream for us.

LH As a digital library, the Knowledge Bank is unique in that it is available to an entire country, not just certain organizations or institutions. How did you get the publishers to agree to participate in this project?

MS We initially faced challenges from the end users on all fronts, the teachers, parents, students, and the publishers. With some publishers we had good cooperation and understanding, with others we had resistance. Some publishers saw this is an opportunity, a good experience and said, 'Let us try it'. They could see that Egypt has the largest population in the Middle East region by far. There was the potential for them to re-sell this model and replicate it in other countries in the region. We call them the 'Golden Partners'. They were always helping us and were flexible about making a lot of English content available in the Arabic language. In fact, shortly before we started, some countries in the Gulf had an interest in this idea, so some of the English material had already been translated into Gulf classical Arabic, which is different from Egyptian colloquial and modern standard Arabic.

On the other side, some publishers showed resistance. They said, 'No, why should I make these efforts? What is the benefit to me? How much will you pay me?' Before closing any deal, the question was always about money and the cost of this material. Some saw that to make content available to all citizens, there would definitely be abuses that could not be controlled. They feared the material would not be geolocked (only accessible inside Egypt), that citizens might download the articles and sell them, that other platforms would share this content. These were the publishers' worries. But now, thank God, we have established a lot of credibility. When we ask the publisher anything now, they help us.

LH Educators concerned with access and equity worry about problems of digital inequality, or the digital divide. In your assessment, as someone with

access to statistics and trends, will this shift to online learning leave out many people in Egypt? What is your understanding of this?

MS The usage numbers are very promising. People were claiming that not everyone has Internet access at home, not everyone has tools such as a tablet or smart phone to access the system. In fact, this is a small portion of the population. Let us say that most of the Egyptian population, more than 65%, are technology natives, this is what they are born into. The day we launched 'study.ekb.eg', within the hour when Dr. Tarek made his announcement, we had eight million views on the platform.

3. Building a Learning Management System during COVID-19

LH With COVID-19 and the school closures in March (2020), how did the EKB team prepare for the sudden transition to online schooling?

MS The COVID-19 pandemic happened suddenly. Everyone started thinking that the whole world should stay at home and switch to schooling from home. We formed a task force and really worked around the clock four days. Without exaggeration, we added millions of pieces of content divided among the different grades and subjects. By the fifth day we launched the 'study.ekb.eg' platform to serve the entire population. We called it 'Study'. Around 640,000 students accessed this platform, and that is not counting Grades 10 and 11. To get there, we took content from the publishers for different grades and gave it to the Center of Curriculum and Instructional Materials Development (CCIMD). Thankfully, they stayed up nights to divide the material by grade, subjects, and lessons. We added 'tagging' and 'search' features so students could easily locate the material according to their grade and subject. The Study Guide on the dashboard provides the student daily information about what to study and the homework for the day and it provides quizzes on the lesson.

This could not have happened without the alignment of the Ministry and the publishers who were convinced by this plan. We worked for four days with very good partners. CDSM is a company that offered the solution for the Learning Management System. We also worked

with all the publishers, from the international publishers like Discovery Education, Britannica, Wolfram, and a very large number of other publishers, and national publishers like Nahdet Misr.³ We adapted Edmodo for K-12 which provides a virtual process that is like the school.⁴ Edmodo's advantage is that teachers can grab any content from the EKB and share it in their virtual classes, something that is harder to do in the physical world. This was a collaborative effort between us, the publishers, the Ministry of Education, the CCIMD, and the teachers who cared about working hard with long and late hours. This is something that makes you happy and confirms that we are no longer talking about dreams, there is a real demand for this online. Everything quickly evolved.

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- 3 Nahdet Misr was founded in 1938 in Egypt and has been a leading provider of K-12 curricula and textbooks in Egypt and across the Arab states (see Chapter 15 and <https://nahdetmisr.com/about-us/group-overview/>).
 - 4 Edmodo (established in 2008) was an educational technology platform for K-12 schools that allowed teachers to share content, distribute quizzes and assignments, and manage communication with students, colleagues, and parents. The interface was similar to Facebook. It was acquired in 2018 by the publicly traded China-based gaming company NetDragon Websoft Holdings Limited ('NetDragon' or 'the Company', Hong Kong Stock Code: 777). With the start of the pandemic and school closures worldwide, UNESCO recommended it for distance learning. The company claimed in 2019 to have more than 100 million users worldwide. Egypt accounted for a good deal of its growth. The company announced its partnership with Egypt by Tweet on 19 March 2020 stating, 'Starting today, Edmodo will be rolled out to over 22+ million students and over 1+ million teachers in the country to provide distance learning support in the period of school suspension and to enhance learning thereafter'. It referred to the 'unprecedented move by the Ministry of Education in the Arab Republic of Egypt ("MoE") to be the designated online learning platform for the K12 education system in Egypt'. On 29 March 2022, NetDragon announced, 'In Egypt, we recently signed a definitive contract to supply 94,000 Promethean interactive flat panels to K-12 schools across the country, another milestone in our long-term partnership with the Ministry of Education' (PR Newswire 2022). However, despite these plans, on 22 September 2022, Edmodo announced by Tweet that it was shutting its operations and permanently deleting all accounts. It gave assurances that personal data would not be sold to third parties, yet the US government brought a legal case against it for being in violation of the Children's Online Privacy Protection Act of 1998 (COPPA) and mishandling children's data. As reported in Gizmodo, '... students and parents often had no choice but to use it. It was also free, and... Edmodo made its money showing ads to all those little kid eyeballs, propped up by personal data including kids' names, birthdays, ages, emails, and locations, according to the FTC' (Germain 2023). The controversy and sudden closure of this company became a cautionary tale of what can happen when schools, with all its sensitive data, outsource their infrastructures to third parties (see Chapter 1 in this volume).

LH Can you explain how you at the EKB coordinated with the Center of Curriculum and Instructional Materials Development (CCIMD)?

MS To be honest, before doing this work, I did not even know this unit existed at the Ministry. Now we work directly with the CCIMD and talk with people there on a daily basis. We receive e-mails with content coming from different publishers that needs to be evaluated. The staff at CCIMD review different educational material and send their comments. We work on these comments with the publisher. Sometimes a translation is not very accurate, or not suitable to younger Egyptian Arabic speakers. We also want to make sure that we can build on content from specific lessons in the Learning Management System (LMS) by providing relevant additional resources. For example, if I have a biology class about the heart, I will find additional resources about the heart coming from Discovery, Britannica, or other publishers. The student does not need to search, these sources will be there on the screen. It is more about navigation. This system helps us to make the subscriptions with other publishers more relevant to the curricula. At the same time, the curricula become more advanced and in sync with international criteria. Perhaps there has never been a collaboration like this, directly between publishers and the Ministry's local partner.

The CCIMD has experiences now they did not have before. We can give them a large number of the publishers' incoming content on short notice, and they can help us in sorting them, giving approvals, providing comments, and dividing them among the different grades, subjects, and lessons. At the other end, the publishers themselves now know our preferences and our needs, so the content delivery is almost ready without many comments. This kind of alignment has made it much easier for us to do what we have done with the digital library and the 'study.ekb.eg' platform that supports all of K-12.

LH How was the platform able to accommodate all these new users and services?

MS Last year with Grade 10, we started to plan for the increase in users each year. We ordered hardware, licenses, and software on-demand, in whatever capacity we needed. This was a linear process, and upgrades were well planned. The situation of COVID-19 made us more experienced,

not only in terms of IT at the backend, but at the Ministry too. We can say we were technologically ready. We had to pay a lot of attention to security issues. Maybe this did not face much resistance because we established a trust relationship with the existing auditing agencies. They saw that we were really separating the personal data from the usage data to keep it well protected, so, they were helping us.

4. Securing User Information

LH Can you explain more about the security side of things and how you protect users and their data?

MS Let me say that for the state auditors, security was always a concern. We needed to not only protect users' identities, but their research interests which includes information about the specific articles and papers they access. All this can reveal national information. The auditors would sit down with us and ask, 'What are you doing? No, explain it to us more'. Security was a pressing and completely valid concern, and one of the obstacles that could have hindered us from creating a national project like this. We know in the world there are many data leaks, and these can even affect elections. It is something we know is happening, so it has been important for us to nationalize the technology.

What we have done is make all the personal user data available locally, nothing is being shared. We started using protocols, something we knew about through Internet2, one of the global research application networks. We relied on a protocol called 'ChipLET' or 'saml' which stands for Security and Searching Market Language. 'Saml' is a protocol that simply separates and makes the users accounts local in Egypt. We then produce tokens or numerical identifiers that don't change, and we exchange this information with the publishers. In the end, the user has access to publishers abroad through the Egyptian Knowledge Bank, but the publishers do not know the identity or email address of the user.

Let us take 'Elsevier' for example. The user opens 'Elsevier' with his or her unique identifier, searches the content according to a language preference, withdraws some books, and places them in the virtual bookshelf. The user can save his preferences and personalization on the publisher's native platform, but this is done anonymously because of

the token system. The publishers know this user is coming from the EKB but does not know the individual behind the request.

Even for 'search' we found searching platforms that could do two types of 'search'. We have 'discovery tools' and another called 'federated search'. Briefly, with the discovery tools we take the metadata from all the publishers and place it here locally. The metadata does not include the full text. We index it and the search takes place against the index that is stored locally in Egypt. This of course makes the search extremely fast and smooth, but it will always lag in content a bit since we have to update the mega data monthly or quarterly, and the articles produced in the interim period will not appear in the search.

The 'federated search' allows you to search multiple data sources at once, which for us means content from the different publishers. What we have done is produce something called a 'hybrid search'. This did not exist before. We are running it with a partner called Muse, one of the very well-known academic search platforms that used to be federated. We gave Muse our requirements, until we developed our own platform that is running and totally hosted here in Egypt, with all its indexes. Even the Muse platform is locally hosted. No one can know who the user is within the platform. Even the partners on the platform cannot know anything relating to personal identity.

5. Using Data Analytics in Education

LH The online schooling ecosystem is made up of different components such as the virtual classes, the Edmodo platform, and all the K-12 materials from different publishers. How do all these pieces fit together and how do you use and analyze the data coming from these different sources?

MS Even though there are different tools, the Ministry has one ecosystem to serve the students. If we must isolate our role at the Egyptian Knowledge Bank, it is more in the content. The Learning Management System is like the library inside the school. It is a kind of a home delivery system, not a traditional library. The second part is the classroom experience. The classroom, the walls, the discussions between the teacher and the students, are, we can say, replicated on the Edmodo platform. Edmodo provides a virtual process that is like the school. Edmodo's advantage is that teachers can grab any content from

the EKB and share it in their virtual classes, something that is harder to do in the physical world. Say a teacher has 120 students in the classroom, a very high density. She can deliver material virtually in an easy way. For students who are shy about raising their hand, they can now send a private message to the teacher to ask about something. The parents can watch what is happening in the classroom and motivate their children to interact on the platform. Because of the virtual classes, more resources from the Egyptian Knowledge Bank are getting used. You can also extract quizzes. This is how the different modules within the ecosystem are talking to each other and complementing each other. And maybe this digital ecosystem has made it easier for faster integration since it provides data that would not have been visible before. We could not have produced statistics from 55,000 schools in Egypt, on more than 1.7 million teachers, and around 22 million students. You need a digital environment to produce this analytics data.

LH What kinds of data analytics are you generating from the EKB, and how does this data influence or inform decisions about changes you make on the platform?

MS When someone registers to use the EKB, we ask for their national security number. Our formal agreement with the publishers is that this platform is for Egyptians, so we have the proof about who is using the platform. We have detailed information about the end users. I don't think anyone else does this. For the researchers we have their major field, minor field, and their affiliation. For K-12 students we know the name of their school, even if students from the same school write it differently. Arabic names might or might not have Hamza, and the same word could be written in different ways, with (ة) with dots or (ه) without dots, etc. We validate information about all the students with the Ministry of Education. We do content batching for student accounts and profiles to accurately build the analytics we want from their usernames and passwords. We have even worked with some entities here that are interested in producing data per governorate. This helps to know which governorate are more and less active on the EKB. We would like to know how people use the platform by categories like, for example, gender and age. We want to know which publishers are preferred by the students and the content that gets more hits. This lets us produce statistics

for publishers. We also want to know which content types are being most used, whether text or videos. All the analytics you can imagine can be extracted from the portal. We print reports for different entities internally with different parameters. Currently, we are experimenting with different business analytic tools on the Amazon cloud. We will probably adopt some of these tools and make dashboards for decision makers to see what is happening in real time.

Dr. Tarek can see the specific schools, classes, and teachers that are active. For example, we might find that biology teachers are more active on the EKB than chemistry teachers, or that Arabic teachers are not interacting with it, which means they need more training. We might see one governorate is working more than another, or that certain governorates experience delays in the network, in which case we would reach out to the Ministry of Communications to work on the infrastructure.

LH Do you know if analytics from the platform are being used to inform education policy decisions?

MS This has not been our focus so far. We are producing the analytics for outreach, to reach a larger number of students and teachers, and to increase the number of trainings and convince different entities to cooperate with the project. Our priority has been to connect to the schools.

LH How do you ensure equality of access to the EKB across governorates and locales, like rural areas or places where people do not have an Internet connection?

MS We faced the problem of some schools that do not have an Internet connection. We dig underground to extend fiber cables, prepare classrooms, and install interactive whiteboards and Wi-Fi coverage inside those schools. After we have finished this physical part to get the infrastructure in place, we can focus more on looking at these analytics for educational benefits.

LH How do you think data analytics will be applied for education reform?

MS When we are ready to start using analytics, we will likely start with the curricula. We will be able to know which components in the curricula need to be adjusted or simplified. With electronic exams, we

have the data to know which group of questions, for which learning objects, get consistently answered incorrectly. We can see which content in the EKB is not very relevant or is translated incorrectly. We can know which parts of the curriculum are outdated, unappealing, or unclear to students or teachers. This will provide us with the data to know what we need to change. With paper exams, we would not have this kind of information. The teachers correct them, and that is it. They don't analyze the questions or student data. And in Egypt we are talking about twenty-two million students in all age groups, so there is no way anyone could process all that paperwork.

Now, with so much data on the different platforms, we have a new opportunity. For instance, Pearson has developed a very reputable tool for marking and scoring exams. We can benefit from those analytics to go back and look at our content on the EKB in relation to the learning outcomes. Previously, we were measuring the student's abilities of memorization and retention. We were not measuring the student's capacity for high level thinking, critical thinking, and true understanding of learning outcomes from the different curricula.

LH How can big data be used for understanding teacher behavior?

MS With this data, we can identify how teachers are interacting on new platforms like Edmodo. There are 900,000 teachers who subscribed to Edmodo and created their own virtual classes. To be honest, this is something we never imagined. Maybe this happened after the private tutoring centers closed because of COVID-19, so teachers started to communicate through these platforms. We thought there would be a significant digital gap with teachers and they would not be able to use these platforms, but so far they proved us wrong. I expect statistics about the teachers will be a very hot topic at the Ministry, and we will be asked to produce different reports.⁵ We are working proactively to create a platform for business analytics, to have dashboards that produce results

5 The EKB subscribed to a tool called Converis from the analytics firm Thomson Reuters. This is a Research Information Management (RIM) platform. Converis (Thomson Reuters) belongs to the category of Research Information Management (RIM) services. The company purports to 'manage the complete research lifecycle, from the earliest due diligence in the grant process through the final publication and application of research results....understand the full scope of your organization's contributions by building scholarly profiles based on our

so we can dive down into the data from the school to the teacher to the subject to the student. We are already exploring these tools for Grades 10 and 11. We want to see which schools and governorates are more active. Where are the top students within a school or in general? With what frequency do they access the EKB? Is it on a daily basis, a weekly basis, bi-daily? What does it look like? Maybe the Ministry still does not have a feedback loop from such information, but I trust it will be happening starting next year, inshaaAllah.

6. Supporting Higher Education

LH The EKB was initially established to support researchers in universities and research centers. Have there been changes in the research productivity and behavior? Can you attribute any progress to the EKB?

MS Before the EKB, our main role was to make knowledge available to research institutes affiliated to The Ministry of Higher Education and Scientific Research and other research institutes. We provided services that linked them to the National Research and Education Network (NREF) here in Egypt. In the past three years, our focus has been on research and education networks globally. We have connections to two international global education and research networks. The first is called, Internet2, which connects to a range of different research institutes and universities in the USA, Canada, and most of the Northern Hemisphere. The second is the GIA Network that connects us to research and higher education institutions in the European Union. Our role was limited to network and subscription services to the different databases.

We are now working actively on the researcher profiles, similar to what you find on ResearchGate or LinkedIn, but for the internal community. Individual researchers can include their international and local publications, courses they are teaching, workshops they have participated in, their travels, all this kind of information. From this data we can know, for example, if there are enough collaborations between centers, like the National Research Center in Egypt and King Abd El-Aziz University in Saudi Arabia, to warrant an official protocol between the two

publishing and citations data—then layer in your institutional data to more specifically track success within your organization’ (Lorcan Dempsey 2014).

institutions. A second application is to flag promising researchers who need support with funds, approvals, and international opportunities. In this way, research funds available in Egypt will be better utilized. Third, we have many calls for research by national entities here in Egypt like The Science and Technology Development Fund (STDF) or the ASRT. Since we know researchers' search history and downloads, we can use the Research Information Management (RIM) system platform to target these calls to relevant researchers and faculties. It can also view collaborations, projects, funds accessed, and the outputs such as the number of patents or publications produced. We did not measure these outputs nationally in the past, but we can do this now.

7. Egypt's Digital Transformation of Education is Here to Stay

LH When the Education 2.0 started in 2017, there was a lot of public skepticism about the benefits of investing so much in building a national digital infrastructure. Since the pandemic, has the public perception changed?

MS Before COVID-19, maybe people did not see this as a priority. Everyone was saying that we have other priorities like health and infrastructure, like paving roads. They saw digital transformation as a luxury. But after COVID-19, the Ministry of Education was able to quickly adapt and serve students who were staying at home. Students and parents showed a high level of responsiveness on the different platforms. This showed that this vision was ahead of its time. Now, everything is moving fast with expanding this digital infrastructure. We are also extending the LMS to higher education. In the beginning, we used to be the ones running after people to interact on these platforms. Today, they are the ones running after us.

LH Do you see this digital ecosystem becoming a permanent part of the education system?

MS The EKB project started with the President's approval for four years. We have been working really well to prove our value, knowing there a possibility that after four years the priorities might change, or the people convinced by it might change, and this platform could stop.

Dr. Tarek always says that the most important thing is to move quickly, to make this platform become indispensable and a part of the daily routine of education in Egypt. People used to tell him, 'Just work on one grade at a time, take it slow'. He would reply, 'No, I want to work on the four grades together, so that even if I am replaced as Minister, my successor will not be able to stop what has been built and return to where we were before. He will have to continue it'. It has become very difficult for anyone to come and stop what we started.

But again, I think that since COVID-19 it has become clear that the money spent on this project has paid off. Schooling was able to continue without interruption, even with people staying at home. No other Ministry had this capability. The other Ministries saw the education ministry as a role model, whereas before they saw what we were doing as a luxury, not a priority. People criticized the distribution of tablets to students in Grades 10 and 11 so much, but now, they see this as something important.

Very recently, the Ministry of Health signed a protocol with the Ministry of Education to extend the LMS platform to serve the community of doctors. This is remarkable. No one would have ever imagined that the Ministry of Education would have an influence on other Ministries such as the Ministry of Health or the Ministry of Higher Education, which is also working now to adopt the same LMS. Last week the Ministry of Interior signed a protocol with Dr. Tarek to start working with them on making the LMS available to serve the Police Academy's community. We had a meeting with them three days ago, and they are very enthusiastic about this development.

We are talking now about a student who from kindergarten all the way through university, will be familiar with this online ecosystem and its platforms with the new methods of research, evaluation, and assessment. If someone goes into the workforce and becomes a doctor, for example, the continuous education and the professional certificates that will be required from him every two to three years, will be learning material from this same platform he is already used to. It really has become like a national platform that is extending to serve different purposes. What Dr. Tarek has done is very promising and farsighted. It has become indispensable which makes it difficult to imagine that all this could be destroyed one day.

LH The EKB is currently funded as a special presidential project, but this funding is not guaranteed indefinitely. How are you thinking about the EKB's future funding prospects to make it self-sustaining?

MS It requires a lot of funding, and this could be difficult for Egypt with the economic situation and all the demands on the budget. We are trying to find ways to make it self-sustaining. Dr. Tarek has an idea for something he is calling EKB Plus, something like an app store, a content store. This would make additional resources available with subscription fees, and the publishers would be involved as partners. From the point of view of the publisher, if this platform already has millions of users, a portion of them will start subscribing to it and the publishers can take a percentage, again, like an app store that takes a percentage when someone download an app. These fees will sustain the free packages of the Egyptian Knowledge Bank, so that in two or three years we will no longer need to get money from the national funds. Dr. Tarek already held extensive meetings with the publishers, one by one, face to face, for the EKB Plus idea. Everyone thought it was a great idea and they started sending proposals for subscription fees. This is a big change from when we started the EKB and many of the publishers did not have this trust that we would be able to manage this, or were concerned that Egyptians would abuse this platform. We have gained a lot of credibility from this project. Honestly, I see it as an example of the revival of Egypt's role in the region. And the publishers see this as a win-win.

LH In what ways do you see the online learning and research ecosystem as preparing Egypt's students for a changing world?

MS Dr. Tarek's vision required having faith that what is being done has a purpose and will benefit the students in the future. When they become part of the workforce, a lot of today's jobs will be extinct. With artificial intelligence (AI), automation, and all the developments that are happening, jobs are changing. This generation needs a different kind of readiness level than the previous generations to be able to push forward Egypt's economy.

LH What do you view as the greatest benefits of the EKB, whether social, scientific, or education?

MS At the very beginning when we first made the Egyptian Knowledge Bank, we saw signs of the scarcity mentality. You find a researcher sitting at one of the universities downloading full texts of many things, creating his own digital library. You would find, for example, that someone downloads 8,000 articles a day. There is no way he will read the 8,000 articles in a year, let alone a day. But people feared that this project might not continue so they tried to download all these resources they might need while they could. In all developing countries, this is something that is fully understandable. People do not understand the problem with copying an application or just photocopying a book. You would even find the professor saying, 'Go down and make a copy of this book at this library'. This is a big violation of copyrights. This is possibly why the publishers were concerned. Today, people are feeling that these resources are available, so I only login and take what I need, and when I need something else later, it will still be there. We completely secured the issue of the copyrights violations, and we improved the people's understanding of Intellectual Property Rights (IPR). All these were dreams. No one would have believed that something like this could happen.

I see the Egyptian Knowledge Bank as having real educational benefits to everyone who has participated in the project, starting from the technology partners who made the platform. The CDSM that created the Learning Management System⁶ learned a lot from this exercise of building a national platform and are now in a position to do this regionally. Muse, that created the Muse federated search, used to serve only the academic community. Now, it is transforming the interface to be less complicated and more appealing to young students. They now use a Google-like interface search engine with a quick response time. All the publishers started to see this as something that could be done at the national level, rather than through individual subscriptions at high prices. Students, parents, researchers, and all end users see the great benefits. Honestly, maybe I am too enthusiastic, but I really see this as a platform that has benefitted everyone and has taken them to higher levels.

6 CDSM is a company based in Wales in the UK. According to its self-description, 'CDSM Interactive Solutions is a digital learning solutions provider, offering bespoke e-learning content and a contemporary learning platform. Founded by further education lecturers, our dedication to cutting-edge learning science and best practice allows us to deliver effective and engaging learning to our customers' <https://shorturl.at/iIOR6>.

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21. Building the Knowledge Bank from Scratch:

Interview with Mohamed El-Araby

*Linda Herrera*¹

Abstract

Mohamed El-Araby, web developer and coordinator of the Egyptian Knowledge Bank (EKB), describes working with a team of engineers to build the platform from scratch. He explains its general architecture, and how they developed special features for teachers and students in Kindergarten through Grade 12. He manages the project's relationship with the publishers who provide the content, and the partnership with the national Center for Curriculum and Instructional Materials Development (CCIMD) to ensure educational materials are properly sorted to match specific subjects and lessons. During the COVID-19 pandemic when the country had to make a quick pivot to online learning, the EKB assumed the additional function of serving as the nation's learning management system which required around the clock solutions. As a perpetual work in progress, he stresses the importance of constantly improving the systems.

Keywords

digital library, distance learning, learning management system, private lessons, study guides

¹ This interview took place on 7 May 2020 via Zoom. Thanks to members of the Education 2.0 Research and Documentation Project Nelly El Zayat and Nairy AbdElShafy for support with coordinating and preparing for this interview.

1. Building the Knowledge Bank Ecosystem

LH Can you introduce yourself and tell us about your role in the Egyptian Knowledge Bank (EKB)?

MA My name is Mohamed Hany El-Araby. I am a graduate of the Faculty of Science, Computer Science and Statistics, Helwan University. In 2007, I started working at LIMS Egypt with Mr. Mahmoud Hussein and Mr. Mahmoud Dawoud and I still work there now. When I started the job, my main role was as a web developer writing code, working with SQL Server,² and working on web developing applications for our clients, like WHO or EUL consortium. These clients were trying to make applications to help them with scientific research and help them support their users online and offline working from home. That was my main task during that time. We evolved by starting the projects for the Egyptian Knowledge Bank (EKB).

LH Just to clarify, LIMS is a private company, but the EKB is a government platform. Is that correct?

MA Yes, the EKB is a government platform. We provide the main coordination for the publishers working within the EKB.

LH When do you remember first hearing about the idea of a knowledge bank in Egypt and what was your reaction?

MA The idea started on World Science Day in 2014. At that time, it was a huge challenge for students and researchers to access content available online. They needed to leave their homes, go to a university or library, and physically see what subscriptions or archives were available. For example, people traveled from Asyut to Cairo just to get a research paper. With the EKB, a researcher with just a national ID, could login and access peer-reviewed, high-quality content from many prestigious publishers from all over the world. They could access a huge number of

2 SQL Server is a relational database management system (RDBMS) from Microsoft. For information on the Database Engine, Machine Learning Services (MLS), Integration Services (SSIS), Analysis Services (SSAS), Data Quality Service (DQS) and more, see the Microsoft Build information page at <https://learn.microsoft.com/en-us/sql/sql-server/what-is-sql-server?view=sql-server-ver16>

valuable papers, videos, images, Ph.D. dissertations, all for free, from home. Today, we can see the good results of this.

LH In 2014 when the idea for a Knowledge Bank was being discussed, did you think that from a technical standpoint it could be built?

MA What I believed was that this was going to be a very good breakthrough. It could provide a wealth of information at any time to all Egyptian users. We were very curious to see how it would go. We wondered how people would accept it and how they would start using it? This was the time when it was becoming more understood that there was a lot of misinformation on the Internet. Remember, this was after the 25 January 2011 Revolution and the Second Revolution of 2013. The idea of a digital library with reliable information from various reputable publishers, available everywhere for researchers and learners, was great. It is much better than just going to the Internet, searching for something, and using information that cannot be verified.

LH Did you have to start from scratch, or were there prototypes you were looking at? Where did you begin?

MA We really had to start from scratch. This was a new experience. No country had built a platform before that is free for the entire country. We knew our researchers were facing obstacles of time and access and we needed to develop a solution to help them. We were trying to build a national education platform for a huge, diverse population where people could follow their curiosity, access materials, and learn from them. We had to build a system that would allow them to find all the resources they needed very easily.

In the beginning, we worked a lot on the interface for registration and login and monitoring the workflow or usage of the system. We wanted to make it easy for users to just login, start searching, and use all the resources available. We also spent time on the search function. We had brainstorming sessions with all the technical people committed to the project to find the simplest way for users because we know that not everyone in the public community has good experience with computers. We were drawing on our previous experiences and the knowledge we gained from working with different stakeholders.

LH Who did you work with to develop the Knowledge Bank?

MA In the early stages, we were working with Dr. Tarek Shawki himself, Engineer Majed Al Sadek (see Chapter 20 in this volume), and for sure, the people of the National Information Network at the Egyptian Academy of Scientific Research and Technology (ASRT) and the Egyptian National Scientific and Technical Information Network (ENSTINET).³ These were the main people we were working with at that time.

2. Bringing Users to a New Platform

LH How did people relate to this Knowledge Bank in the first year or two? Was there anything that surprised you about the user base?

MA In these first years we were visiting universities to do trainings. We told people about how the EKB evolved and informed them that it is available to them for free and they can access it from anywhere at any time. The EKB was tailored to researchers, mainly in universities in the beginning. A huge number of people accessed the project because they really did not believe they could find quality resources and publishers available for free. The training part was mainly handled by my colleague Mr. Mahmoud Dawoud. What I can say is that before COVID-19, we were travelling everywhere across Egypt. We went from Aswan to Alexandria giving training sessions in schools and universities on the EKB. We continued trainings online after COVID-19 because we could not travel. A number of Egyptian researchers who had returned from studying abroad in Germany, the USA, or the UK, did not believe that

3 See the International Standard Serial Number International Centre for more information: 'The Egyptian National Scientific and Technical Information Network (ENSTINET) was created in 1986 by the Egyptian Academy of Scientific Research and Technology (ASRT). ENSTINET has been hosting since 1990. ENSTINET manages a technological platform supporting research in Egypt. It operates the National Research ISSN Egypt Education Network. It collaborates with similar organisations in Europe (GEANT) and the USA (Internet2). ENSTINET also hosts the Egyptian Knowledge Bank Portal, the National Scientific and Technical Repository and a publishing platform among other services. Through agreements with 31 publishers as of 2022, 120 databases are made available to Egyptian researchers and students. ENSTINET and ISSN Egypt have been instrumental in the creation of the Arabic Citation Index with Clarivate (<https://clarivate.com/arabic-citation-index/>) to make research in Arab States more visible' (<https://www.issn.org/enstinet-and-issn-egypt-play-a-leading-role-in-science-communication-in-egypt/>).

this content would be available to them. And some of them, because they were travelling abroad again, were really sad they would not be able to access the EKB from outside Egypt. Their universities abroad did not even have these kinds of resources for them. So, I believe it was a very big success for them and for us.

LH Did academic and scientific output in Egypt increase with the EKB?

MA The published work and the tools available within the EKB helped researchers a lot to write papers and take part in scientific knowledge across the world. My colleagues who follow the rankings and statistics tell me that Egypt has progressed a lot in its research output in the time since the EKB was established.⁴

LH How do you manage the relationship with publishers whose content is on the EKB?

MA My relationship with the publishers revolves around monitoring content and making sure it works and is easily accessed from the EKB platform. In the beginning, we were contacting publishers frequently, especially when an issue or an error arose. If we received information from a user that something like a video was not working, we would contact the publisher to resolve it as soon as possible. Since this is a national project, we also considered security.

For instance, we cannot show the research queries and give information about the people searching on the platform. From the technical side we needed to hide all the content and the users. The publishers themselves do not know who is on the platform and where they are coming from, and so they cannot gather information about them. That was really important for security reasons for the whole country.

3. Kindergarten to Grade 12 Expansion

LH The EKB was initially conceptualized as a platform for researchers, mainly in universities. When Dr. Tarek became Minister of Education in 2017,

4 See the companion YouTube video produced by the EDU 2.0 Research and Documentation Project, 'Arabic Publications and Rankings: The Egyptian Knowledge Bank', 1 March 2020, YouTube, <https://www.youtube.com/watch?v=WkkISY8lfyw>

he wanted to use it for all educational stages starting from KG. How did you manage this expansion?

MA Researchers and university students can search for the content they need on the EKB database directly, but we needed to simplify this huge library for students and teachers so that they would not be overwhelmed by the entire database. For K-12 we developed a 'Digital Library' with all educational content related to the basic educational curriculum. We list the subject followed by the grade. You just go to your lesson and find the additional materials related to that lesson. In 2018 we established the Learning Management System (LMS) for Grade 10 students.

LH Why was the LMS initially for Grade 10 students only?

MA There were two reasons for this. First, in 2018, all students in Grade 10 received tablets that were programmed to directly access the EKB and the LMS. Even though the LMS itself started for Grade 10, we expanded to Grades 11 and 12 by 2020. Also, students of that age are mature enough to use the Internet to find the content they need, and it is likely they have been using the Internet for this purpose anyway. We started by getting the Ministry books for Grade 10 in Physics, Chemistry, Biology, and Mathematics. We divided these books into lessons, so we have for example Unit 1: Lesson 1, Unit 1: Lesson 2 and so on. If the students are on the physics module and have a lesson on electricity, for example, the EKB offers content for this topic. If the lesson is on biology, say the cell, the content should be relevant to this. In this way, students can go to the 'Study Guide' in the LMS, click on their lesson, and find the Ministry book and additional content to help them study this topic. This content can be video, text, images, questions, a variety of different content types that we compile from all out publishers, like Encyclopedia Britannica, Nahdet Misr, and others.

LH How do you select this content for specific lessons? How can you ensure that it corresponds to the Ministry's curriculum?

MA Well, we do not just take content from the publishers and import it back to the EKB without checking it. I make sure that all the relevant materials from different publishers are sent to CCIMD. It gets approved

by Dr. Nawal Shalaby, the head of CCIMD (see Chapter 13 in this volume). They check that these materials support the lesson in the Ministry curriculum. They might be videos, images, explanatory text, quizzes, and study questions. All the content is reviewed, approved, and uploaded correctly to the live environment. We make these additional resources available because students prefer different tools for learning. That is a big role for Dr. Nawal's team. Imagine reviewing topics from all the publishers and viewing fifty videos, each video is about five or six minutes. They write feedback about the videos and texts, and then review the revisions made by the publishers to make sure that the updates have been done correctly. This process of back and forth can occur two or three times, until we get the content the way we want it. And to be honest, the people at CCIMD have really been up to the challenge. They are doing the work at their offices and continuing at home. Many times, Dr. Nawal sent me reports at 5:00 a.m. because this is the time they finish them. They are really committed.

LH The LMS has separate portals for English and Arabic. Do you get all the English content translated into Arabic? Is there a process of reviewing the Arabic translations to ensure they meet your standards?

MA This is part of our collaboration with the publishers. They provide us with this content in both English and Arabic. We get a sample of the content from the publisher and make sure it is relevant and of good quality. If it meets this first standard, we send it to Dr. Nawal's team through the sandbox. This sandbox is not the live LMS, it is another platform which only the developers and designated people can access. Dr. Nawal and her team go into the sandbox and review the content. We work closely with CCIMD, topic by topic.

Dr. Nawal sends me the required reports which I pass on to the publishers for feedback. At CCIMD, they sometimes say no to publishing the content as-is because they need to fix something or retranslate some passages. Even if the publisher thinks that this subject or this topic is relevant to the specific lesson, CCIMD might say no, we believe that this topic would be better in another lesson, and we move it. After all the required fixes and modifications are done by the publishers, we re-upload the material to the sandbox and CCIMD reviews the revisions.

There is usually a back and forth with the publishers. The content appears on the platform only after CCIMD gives the final approval.

LH What is the timeline from receiving content from a publisher to putting it on the LMS where students and teachers can access it?

MA Well, it depends on what we need to do. For example, if we are fixing text, it usually takes a maximum of two days to make the changes, put it back on the sandbox, and get it reviewed by CCIMD. Other times, it is a matter of changing a narration for a scientific video. For example, the Arabic scientific terminology might differ in Egypt compared to Syria or other Arab countries. We need to use the same words used in Egyptian schools so students do not get confused. That could take longer.

LH How have your responsibilities at the EKB changed as the platform has expanded?

MA The job description evolved from being a web developer into somehow like project management. This means meeting the requirements from the stakeholders, namely Dr. Tarek and the Ministry of Education who have a vision of how the platform should work, and the publishers who are providing the content. It also requires managing the platform so that all content meets the Ministry's requirements and students can easily access it. We need to make sure that the right content, whether video, infographic, or whatever, appears in the required place in the Study Guide and is correctly labeled for the search with the required tags, keywords, and technical parts. We need to make sure that all the content is accessible from all devices, and I need to check the LMS, mobile devices, and tablets.

LH Do you think the EKB might be changing the society's approach to private lessons? For instance, might there be decreased demand for lessons because of all this freely available material on the EKB?

MA I believe private tutoring is something in the culture now. It is not how students should be taught, but it is part of the culture since the time I was in school. At that time, private tutoring was mainly something for high school students to help students prepare for the Thanaweya Amma. Now, private lessons are starting from Grade 1. This is how lessons have evolved. If parents have the money, they can pay to get a private tutor

and do not have to bother doing any studying with their kids. I believe now with kids using mobile devices, they can find the content they need to help them with their lessons. If it is useful, private tutoring would just gradually decrease. Students will now be able to just rely on themselves. It will not happen overnight, it will take some time.

4. Teachers in the Digital Knowledge Ecosystem

LH We have been talking a lot about researchers and students in relation to the EKB. Can you speak more about teachers in this knowledge ecosystem?

MA I believe teachers are the people who direct students to the required parts in the LMS itself. When you open lesson plans, there is a portion directed to the teacher. Teachers can access the Teacher's Guides in the LMS as well. They can compile videos from Discovery, explanatory text from York Press, questions from Britannica. They can create their own content using videos and images and add whatever they want into a playlist and share it with their students. Before it is published, there will be a cycle to make sure their content is approved by the Ministry and relates to the curriculum. Teachers can interact directly with their students by sharing files, scheduling assignments, monitoring student progress, and having discussions with them. They can get statistics about which questions are being answered correctly and incorrectly. This lets teachers know where the gaps are in what they have taught to their students. They can form their own networks and work together. Also, events can be created for the Ministry and the school itself.

LH This sounds like a lot of extra work for teachers. Do they have support?

MA Yes, if they want, they can ask some very good students to work on the playlists. They need training and proper development to make sure they can use the platform in the best way and not be overwhelmed. Changing from in-person learning to introducing digital learning online is a challenge in itself. For the teacher trainings, Mr. Mahmoud Dawoud usually works with master trainers from the different governorates, and they go to the schools to train teachers. In the coming period, the Ministry of Education has some other projects for training teachers about how to use the EKB and digital devices in education.

5. Pushing Digital Frontiers during a Pandemic

LH The EKB was up and running prior to the pandemic. When schools closed on 15 March 2020, Egypt appeared to be more technically ready for distance learning compared to other countries. From your side, how prepared was Egypt for this shift to online?

MA I believe this was the only platform that maybe predicted that something like this could happen. We had already been trying to make it easier for users to access all materials from home or anywhere, from a smartphone, tablet, or whatever device. We did not know we were going to have a pandemic with everyone staying at home. We did not want this to happen. We hope we will get over this and get back to the streets and schools. But this situation shows that we were right to prioritize such a platform with educational content available for everyone. In the LMS there is a designated workspace where teachers handle content for their students, and there is also a place where Dr. Tarek can send announcements to all students and teachers. This is a way to keep everyone updated.

LH How did you adapt the EKB platform for distance learning during the pandemic? How long did that take?

MA We created a separate platform for students to access all materials without any login or barriers in just four days. We worked around the clock. This work was between CCIMD, our team at LIMS, and other partners. We were over fifty people working on this, because all the team at CCIMD had to check the content for the study platform. Normally these things would take until the next school year, so we had to speed things up. We slept maybe for only an hour or two each day. We worked together to make sure everything would be ready for the users when Dr. Tarek announced the platform on March 19.⁵ I feel proud of this.

LH It is incredible that you prepared everything in such a short period of time. Are you satisfied with the results?

5 See the video posted on Tarek Shawki's Facebook page announcing provisions for the education system under COVID-19 school closures, 19 March 2020, <https://www.facebook.com/tshawki/videos/10222860204678325/>

MA It is nice, but we are still working to make it better. Even if it is good, we do not stop. That is what we are doing right now. We are still preparing a lot for the next school year because we do not know if schools will open in the fall.

LH How have you been able to absorb this huge spike of users coming onto the platform after the pandemic? Do you know the rate of growth of users?

MA I believe there was work on the servers and the hosting to make sure we can absorb this huge spike in users. We also removed the barrier of registration and allowed people to access the EKB by just creating an account. We made another platform called ‘study.ekb.eg’ where primary and preparatory stage students can just open the URL and get access to the wealth of information available in the LMS without doing any registration. This saves their time and makes it easier for them. Students in Grades 10 and 11 have the tablets and already know about how to access the EKB and how it can help them. I do not have statistics with me. I do not get statistics as this information is usually between the Ministry and ENSTINET and the people who are responsible for hosting the EKB.⁶ But I believe that the numbers have been increasing by a very big percentage, specifically since COVID-19.

Students are currently doing research projects in schools. Almost every household in Egypt has a student working on schoolwork from home. The EKB is the only platform that can provide them with the content they need in a very easy way. My niece had a project about tourism. I helped her search about tourism on the EKB. The information is not from Wikipedia, or some unverified part of the Internet where we do not know who wrote it or reviewed it. When we found material on the EKB, she started telling me, ‘Yes, I remember this topic. I remember the teacher speaking about this and I can add something about it’. So, the platform we provided after COVID-19 really helped them.

LH Do you regularly adjust or tweak the EKB?

⁶ The statistics and user numbers for the EKB are not publicly available. Occasionally the Minister of Education mentions some figures in a speech. Other than that, the public does not know how many people use the EKB and with what frequency, the number of downloads, and other information.

MA We do this on an hourly basis. We constantly open the LMS to see if there is any topic not appearing, any technical problem. We check that the search is working and see if it can be enhanced in some way. We are still working on the books, study guides, making sure they will appear correctly. We are getting more content from publishers and making it available for the students in a very good way. The reviews from the CCIMD do not stop, they are reviewing everything in the LMS all the time. We are trying to make sure we give our students a better quality of the content and make it appear for them in an easier way. I am trying my best. We are all trying our best.

6. Companion Video

Video 21.1 Mohamed El-Araby: 'Egyptian Knowledge Bank for Grades K-12', Interview by Linda Herrera, Education 2.0 Research and Documentation Project, 7 May 2020, YouTube, https://www.youtube.com/watch?v=tDZg_OQdn28

22. Making Education Entertaining: Interview with Mai Magdy

*Linda Herrera*¹

Abstract

When schools across the country closed during the coronavirus pandemic in 2020, the Ministry of Education and Technical Education hired a production company to produce and disseminate class lessons via television and YouTube. The two channels, Madrasetna 1 (for Grades 4-6) and Madrasetna 2 (for Grades 7-9) would become the Ministry's media arm to support the idea of an 'open school'. Madrasetna 3 later followed for Thanaweya Amma revisions for Grade 12. Mai Magdy, the General Manager of Madrasetna TV, Sky Production, talks about the process of working with public school teachers to recreate classes for television. She reflects on the responsibilities and rewards of producing video for educational purposes and talks about the need for more children's educational programming or 'entertaining education'.

Keywords

distance learning, children's programming, edutainment, influencers, social media, television production

¹ This chapter is based on two interviews with Mai Magdy conducted by Linda Herrera on 16 and 20 January 2022 via Zoom. Thanks to Nelly El Zayat for making the introductions.

1. Launching a Television Channel During a Pandemic

LH Can you introduce yourself and your role you at Madrasatna?

MM² I manage two channels, Madrasatna 1 for Grades 4-6 of the primary stage, and Madrasatna 2 for middle school (Grades 7-9). I manage the content and the operation.

LH What former experience did you have in production?

MM I was at CBC (Capital Broadcasting Center), one of the leading channels in Egypt. It launched in 2011 with huge names, presenters, and budgets. I worked as a producer from the time of the launch. After two years, I became a Senior Producer, then the Director of Operations for about five years.

We had one entertainment channel and one news channel. Most of it was current affairs. And, of course, we had huge entertainment programs in formats like X Factor and things like that. That job was in Dubai. I wanted to work at home in Egypt, so I came to work on Madrasatna.

LH Was your work at CBC similar to your current work at Madrasatna?

MM The only common thing with operations is the idea of the factory. We had to plan for eight to thirteen hours of content a day. We had to think about a huge amount of content hours.

LH The channel Madrasatna 1 was launched during the COVID-19 pandemic. What was it like starting such a big project during a pandemic?

MM In the beginning in 2020, there was an urgent need to get some classes online or on TV since the schools were closed and the kids were at home. Our team of four created the whole channel from scratch. There was nothing—no studios, buildings, editing rooms, control rooms, nothing. Everything was created in three or four weeks. It was a huge challenge. It was the first time to create a channel to replace real school, maybe in the whole Middle East. We did not have a visual reference

2 Mai Magdy is the General Manager for the Channels Madrasatna 1 and Madrasatna 2. For more information on her professional experience, see <https://www.linkedin.com/in/magdymai/>.

worldwide for how to do the classes. Nobody in satellite television does schools. This never happened before, and it was hard to get there.

LH Did the channel start as a temporary project to fill a need during the school closures during COVID-19?

MM I only received a one-year plan in the beginning, so I assumed it was a temporary project. At the time it was just one channel, Madrasatna 1, which covered Grades 4-9. So, the first challenge was to get this channel up and running in just one month in time for the academic year which started on 16 October 2020. That was extremely hectic. Production studios are always busy and there were many cases of COVID-19. These were weird and strange times, and sometimes really frightening. For example, we found a good teacher to cover the subject of math for Grade 5. Then she tested positive for COVID. I could not cancel the shooting for one day, and I definitely could not wait for fifteen days for her to recover. So, we had to move fast to find an alternative because we were always recording. And we did it.

LH What were the main challenges of trying to bring educational lessons to television?

MM In the beginning it was a challenge to visualize books and make a class as TV material, especially the graphics. Normally, this is something you should work on in production for at least two months. The time was extremely tight. We began with thirty-five hours a week of content, roughly eight hours a day, which was huge. We were doing something new, something we had never done before. And we were working these long hours during a pandemic. We tried to shadow the number of the classes kids take at school and cover the full curriculum. For example, if children get ten classes of Arabic each week, we do the ten classes with a twenty-five-minute lesson, a copy of the real school.

LH How did you decide on how to present school lessons for television?

MM You always have to prove your proof of concept. We did many rehearsals and zero episodes, episodes that are never aired. These are just trials until we get there, till you feel it is right and understandable for everyone. For example, I started with finding English teachers with

good accents. Just good accents, not American or British. I found out that any fluent speaker on TV will probably get negative feedback.

LH Why would Egyptian teachers with fluent English get negative feedback?

MM The kids hate it here in Egypt when teachers have a full American accent. For example, for the Grade 4 curriculum, I started doing the science and math episodes in English with a teacher who speaks with a fluent American accent. The feedback was really bad, extremely bad. Mothers all over social media were saying, 'You are not doing this product for American kids. We are Egyptian kids. We don't understand'. It is experience, there was a learning curve last year, and we are still learning.

LH Do you regularly check social media to get feedback on your products?

MM I check it every day (laughs). Because, you know, sometimes you review your product and you see perfection, it seems great. But when you put it out there, you get a very different reaction. We must respect the opinion of the parents and kids. We are doing the product for them. They are the real client. And I always work on the feedback. Last year I got some negative feedback on social media on two teachers, so I asked if I could I change them. I got approval by the midterm break and changed them. They were good but people were complaining about their voices.

LH We are talking now in 2022 and there are three Madrasatna channels. What is the audience for the two new additional channels, Madrasatna 2 and 3?

MM Madrasatna 2 is a new channel that has been running for two months. It is dedicated to the middle school stage (Grades 6-9). The high school revisions are on Madrasatna 3. We worked on the revisions last year and produced 156 episodes, but they were aired on a different channel. We are not responsible for this channel for high school revisions anymore. Sky Production is responsible for Madrasatna 1 and 2 only.

LH What is the relationship between Sky Production and the Ministry of Education?

MM The Ministry is our client. We are a production company.

LH Do you use studios from the Ministry?

MM No, we rent studios. And we also use a small studio in Al-Ahram for the entertainment programs. It is one of the oldest studios in Egypt.³ But the Ministry is working on their own studios. They are going to be world class studios with good equipment.⁴

2. Working with Teachers for Television

LH Do you oversee the casting of teachers? What is the process?

MM Yes, and I work with some senior teachers who are consultants on this project. And of course, the Ministry oversees the final selection. Last year (2020), we did recruiting calls at a huge number of schools. We focused mainly on people from the Ministry's two main teacher training programs run by Teachers First and Discovery Education. We got recommendations from schools from those two programs. This year we also posted a recruitment call on our Facebook page. After the first cut we brought teachers and tested them, just a camera test. Someone may be the greatest teacher in the world but not TV material. Some of them just cannot perform in front of lighting and the production people. At the end of the day, we selected thirty teachers.

In the most recent casting call from 2021, we got around four hundred applicants for primary and prep (Middle School, Grades 7-9). We asked them to send us a video and teach us something in three minutes. It is much easier when you have something already to start with. The junior producers did the process of elimination until we ended with a group of forty-two teachers.

LH Were you looking for certain characteristics during casting, like younger teachers, or teachers who carry themselves in a certain way?

3 The iconic Al-Ahram studio was destroyed in a devastating fire on 16 March 2024. Al-Ahram was one of Egypt's oldest studios founded in 1944 and was 'one of the Arab world's most prestigious and oldest film production houses' (Al-Ahram 2024).

4 The idea for the studios began during the time of the Minister of Education and Technical Education Dr. Tarek Shawki (2017-2022), with his deputy minister Dr. Ahmed Daher. The studios were finally inaugurated in April 2024 under the new Minister Dr. Reda Hegazy and his Deputy Dr. Daher. 'The Educational Content Studio' is located in October 6 City on the premises of the Professional Academy for Teachers (PAT) in collaboration with the companies UNESCO and Huawei (EDUTech Talks 2024).

MM Honestly, we needed to be inclusive. We have this statement, 'Everybody's Welcome'. For example, I have nothing against teachers with the veil. And if the teacher is a bit older than the average TV material, it is fine as long as he or she is good. But mostly, we work with younger teachers. What stood out were the ones who had more creative ideas and found ways to get things extremely understandable on TV. Those were the best, and we had many of those to be honest. For example, we had geometry teachers who drew everything in an appealing way. We had many talented teachers.

LH What did you learn about teachers during the casting calls?

MM After a few casting calls it became extremely clear that we have two kinds of teachers. The first are those who are interested in their development, new methods of teaching, and learning new things. The second group are those who are just interested in two questions: how many hours are you taking from my week, and how much money are you paying me? This second type is hard to work with, to be honest. This kind of teacher is just mainly talking about money. It is important to be paid. It is their time. We cannot pay much of course, but it is reasonable. This year we have much more experience and are better at making the selections.

LH I wonder if teachers who present on your programs become in demand for private lessons?

MM From my experience no, they do not get more private lessons. What I have seen is that they are getting more followers on social media. But they are not getting any richer.

LH Can you cast teachers who do not live in Cairo, who live in other governorates?

MM We always send cars to the ones who live one hour and a half, or two hours away because this is the only thing that guarantees that you will get your presenter on time. Some teachers live farther away, and we get them from the train station, every week. The thing about working with teachers is that they are not used to surprises. Sometimes we have

to do something in a hurry and tell them, 'We have to air now. Just come in here now'. They hate to ruin their schedule. Their schedules are holy.

LH You have worked with a lot of talent in your career. How does working with teachers compare?

MM Working with teachers is much harder than working with presenters because you must work on everything. Almost everything. We start with the looks. That is the easiest part for me because I don't do it, the stylist does it. We do not do glamorous things or anything, we just keep to the normal Egyptian teacher but help him or her to look nicer, smarter. We need to style teachers simply. We provide their wardrobe.

LH What kind of image are you aiming for with their wardrobe?

MM Neat. Just to look nice. It is never expensive clothes. I will tell you one observation (laughs). Most of the teachers wear their clothes like three sizes too large. That makes them look huge on TV. On TV, you have to be presentable. So, we get them clothes that fit them.

LH Are there certain colors or styles you prefer for teachers?

MM That depends on the studio. If you have a lot of colors in the background, they have to wear plain colors. We just make sure they do not wear clothes with many squares and stripes because they blur.

LH What is the nature of media training that you provide for teachers?

MM We tend to work with the voice and the phonetics because speaking in a studio is so different from speaking in the classroom. Teachers tend to talk in an extremely loud voice. The first time is always a disaster, and the first episode has lots of cuts. You also need to work with them in a special way, very different from presenters. You have to make teachers feel at home and be nicer than even their mothers. You need to make them feel safe, help them try other voices and poses. For example, when sitting at a desk it is always nice for a teacher to lean on his or her elbow. So, we train them on how to sit, how to look, and how to read from the monitor. When someone is in front of a camera in a studio, they get there eventually. Once they get used to everything, we deal with their psychology in the same way we would with a presenter.

3. Bringing the New Education 2.0 Curriculum to the Screen

LH When Madrasatna started in 2020, you were working with the '1.0' books from the old system. This year the new books for Grade 4 have come out. Have you seen a difference in quality and content of the old books versus the new ones?

MM As a TV producer, the first thing I can say is that the books look great. They are appealing, and the designs are great. They are TV material. You can just use the photos from the book to fill the full screen. All we have to do is show it off (see Fig. 22.1).



Fig. 22.1 Still from Grade 8 Social Studies Lesson, Madrasatna YouTube channel, 7 December 2020, <https://www.youtube.com/watch?v=pNmRkcggh8ac>

MM The children use worksheets from the books. We print these materials in the studio. We also have kids in the studio for some episodes of Math, Science, Careers, and Social Studies. We do this to make everything just like the class. Everything in the studio is trying to mirror the new books and the new curriculum. We do not use a lot of screens or graphics; we use the books. And when in 2021 we were casting for Education 2.0, we met more talented teachers. It was an extremely interesting year. This term, from October 2021 to January

2022, we produced 346 hours for Grade 4 alone. This is a huge number of hours for one term only. I guess next year we will be working on just Grade 5 and repeating the Grade 4 material.

LH Aside from the quality of the books and images, have you observed other differences between the old 1.0 system and the new one?

MM Yes, everything has changed. The 2.0 system is extremely different. I always wondered when our education system in Egypt would change, and it is real now. I think it is a real leap, it is amazing. And I think they did a great job with the languages too, especially Arabic, I love the Arabic. It is smart and clever. From my perspective, this is the most important thing happening in Egypt right now, the 2.0 system. This is the main investment, the real investment. I will tell you something. My friend has three kids who are all learning in Egyptian national schools. She was saying that her youngest who is in Grade 4 (taking the new system) is the only one learning anything in school. I think this is the most powerful thing I have heard. And now the whole curriculum for Grade 4 is out there on YouTube accessible to everyone (see Fig. 22.2).⁵

LH Who oversees and writes the scripts for each lesson?

MM Discovery Education works with us in the studio on their books, and National Geographic works on their books. They write real scripts, not just bullet points. It is important at this stage for the creators of the curriculum to work on the scripts. We have had many trials. For example, Discovery wanted to use less technology to be more like a real class. They had an opinion, and we had an opinion. We both compromised until we got the perfect episode. We worked a lot and had many rehearsals. We spent maybe one week on rehearsals.

LH Does somebody from the Ministry sign off on final episodes?

MM Not really. Every subject is a little bit different. We proofread for the language episodes, and our revision teams check the work of the content creators. For example, we hired someone just to revise Grade 4

⁵ See the Madrasatna YouTube channel at <https://www.youtube.com/@madrasatnatv/featured>. As of September 2025, the channel had 661K subscribers, 8,540 videos, and over 53 million views. See also Madrasatna 1 and 2 on Facebook.

Social Studies because when you go through the graphics, you always need to check them twice. We have producers, post-producers, and teachers in the revision team to check course content. This happens automatically. We have a whole department for quality control for the visuals and everything.

LH Are any of your programs specifically targeted to the teachers?

MM The new curriculum is new for the teachers, not just the students. This year (2021/2022) we have a program called, 'The Teacher's Guide'. It is ten minutes a week for each subject. We use the Teacher's Guide as a way to tell them, 'This is your Bible'. If you are a teacher, just watch this. Actually, the Ministry wants us to work on the Teacher's Guides for Grades 1, 2, and 3, so that is coming up in the future.



Fig. 22.2 Still from Grade 5 math lesson, Madrasatna YouTube channel, 16 December 2023, https://www.youtube.com/watch?v=Lclo4_namQk

4. Entertaining Education

LH Apart from covering class lessons and some tutorials for teachers, do the Madrasatna channels develop other types of children's programming?

MM Yes, we have the freedom to work on entertaining programs not connected to the curriculum, though most of them are educational. Right now, we have two entertainment hours every day. The other

programs are aired mainly in the summer break. We come up with the shows ourselves.

LH What shows are you currently working on?

MM We started last year with short programs. We have a food program with short recipes for kids. We have a science program called 'The Lab' where we do all the science experiments from the curriculum from Grades 4-9 in the lab. I found a very nice guy with a huge social media following who just does science. We started meeting and came up with the program. We also came up with another program, 'The Lab Challenge'. It is like a game show, but it is a science game show. For example, the theme today is liquid nitrogen. We have three experiments and a contest, all with the same theme. We had one about coins, magnets, Tesla, it was very interesting. We are working on Season Two with a TV presenter who is one of the important science influencers in Egypt. We want to bring the social media personalities kids are following to television. It is a different product. A show called 'What if' explores two ideas in the same episode. We provide something that could never happen on social media, because we have our different elements like graphics and production. We also did fifty episodes of origami. 'Do it Right' is an animation program about safety with two kids, one of them doing things in an unsafe or wrong way, and then the right way. There are things like tips about sleeping, your health, things that make you more focused when you have a test. It is a short animation program. We are also working on a very nice animation series about Arabic grammar. We have the famous Arabic philosopher Sibawayh as a character in the program.⁶ In each episode we are lost in some maze, and we get out through learning a new grammar lesson. It is called, 'The Letters Word'. We have this program called 'Under 16'. The presenter chooses one subject to discover with like five, six kids. We just listen to the kids for the whole episodes. 'A Family Discussion' is a real debate between children and parents. They choose something to talk about, and the presenter

6 As stated in Encyclopaedia Britannica, Sibawayh (born around 760 in al-Bayḍa Iran and died roughly 793 in Shiraz) was 'a celebrated grammarian of the Arabic language. [...] His monumental work is *al-Kitāb fī an-naḥw* ("The Book on Grammar") or, more simply, *al-Kitāb* ("The Book"). The work was frequently used by later scholars' (<https://www.britannica.com/biography/Sibawayh>).

is like the judge. At the end of the episode, they sign a treaty which is a sort of a resolution. 'Celebrities' is a short three-minute program about historical figures who encountered huge challenges. It shows how they passed through hardships and what we can learn from that. The biggest project it called 'Ta`alum' or 'Learn'. It is a huge umbrella that we are doing over seasons. Last year we did four levels of five languages, English, French, Spanish, Italian, and German. We got great feedback on this. It was the biggest feedback since we opened, because it was really useful. It is free and you can just learn the language you want, the time you want. Now we are working on the new season.

We are planning to do two programs about coding. For this show I met a kid who was promoting coding through his Facebook page. We met in person to plan the show. I hired just one producer for it. We are still in the pre-production phase and plan to make sixty episodes in two months. We are also working on a program to learn how to play Chess. 'Izzay' or 'How' is a huge program with life coaches and psychiatrists who work on topics related to children. We produced 168 episodes so far. We tackled everything from autism, hyperactivity, managing your time, and how to learn respect, to how to teach children to manage money. Each topic takes two to three episodes. We have a special life coach or psychiatrist for each program. It is a daily program. It is like a life coach giving a course to parents. The fitness program for kids has two kids with a gym instructor, teaching kids to do sports at home, things that the mother and children may do together, things like that. This is on air right now.

LH That is a lot of programming!

MM It is a factory, you know. But I really like working on ideas from scratch until the show gets there. I like the process because it includes kids, and they have really been teaching us.

LH Do you need the Ministry of Education to approve the children's shows? Do they play a role in promoting this content?

MM Up to this point, the Ministry helped just by sharing the grids on their pages, which are much, much bigger than ours. But I think we should go for more. I get the approval from the Ministry through our

CEO about the concept and the presenter. We always get the approval before the production, of course. And to be honest, working with the Ministry has been surprisingly pleasant. We used to do stuff with the government in a hard way, but I think things are changing.

5. Viewership and Circulation

LH Do you have information about the viewership since the launch of the channel?

MM Unfortunately, we do not have statistics about TV channels anymore in Egypt. This stopped seven or eight years ago. We have two kinds of channels in Egypt. We have those in the satellite, and we have the other channels that are aired on short waves all over Egypt. The Madraseta channel is aired on a kind of transmission which is like a radio. You can receive it everywhere. You can never get data on this kind of use. But for social media, the numbers are growing. I found thirty-six Facebook pages that circulate our TV material. And there are many channels on Telegram. We also have constant viewership from many Arab countries, mainly Saudi Arabia, the UAE (United Arab Emirates), and Kuwait. And we always get viewership from Italy. I don't know why. I think it is from the Egyptian kids who live there. This year is extremely different compared to last year. For instance, we have this daily social show, a talk show where our reporters go to the streets. Last year people would ask, 'What is Madraseta? What do you do?' This year, everyone knows about the channel and the pages are doubling on YouTube. We did not campaign much. Last year the primary pages were like, 200,000 likes. Now it is about half a million. And it is an organic growth. I started to get calls from teachers every day with ideas for programs.

LH When did you see that bump in user activity?

MM When we started doing the revisions for high school with Madraseta 3. The channel also got better known with the entertainment programs during the summer break. That is when people really hooked up with the channel. I started to see a lot of feedback on social media from people I did not even know.

6. Madrasatna 3 for Thanaweya Amma Revisions

LH Madrasatna 3 was launched in the spring term for high school students preparing for the Thanaweya Amma exam. Does that channel operate according to the same model as Madrasatna 1 and 2?

MM Thanaweya Amma Revisions are a project involving three companies: Sky, which is responsible for studios, postproduction, planning, and revisions; Al Mentor, responsible for providing content; and Madrasatna 3, responsible for airing. At first, we were responsible for producing 156 episodes, but we did not air them. The airing was done by al-Ahly channel which owns the Madrasatna 3 channel. As a producer I just had to plan it. We had subject supervisors, freelancers which we picked from all types of schools, the international schools and national schools, and schools from a range of governorates as well as Giza and Cairo. When we were beginning the project, I had to be there. I was always in the preproduction.

For the high school level, we had like three checkpoints. Each episode was revised. One by our consultants, then by the company Al-Mentor who were the co-producers in the project, and the revision team of Madrasatna 3 which aired the project. We also worked with the CCIMD (Center for Curriculum and Instructional Materials Development) and of course we had some instructions from Dr. Nawal Shalaby (Director of CCIMD). We had a huge community of teachers. We had two kinds of revisions. General revisions regarding the whole subject with its ten episodes, and additional revisions right before the exams requested by the CCIMD team. They asked for three episodes for Math for Geometry, Arabic grammar, things like that. Because the timing was so tight, it was hard in the postproduction because of the revision loop. Each time there was a tiny problem, maybe in one letter in a strap or something, we had to go back to the episode, open it, then render and go through the whole process again. The timing was extremely tight. We had many, many changes and were always late. We had to finish all the episodes fifteen days before the examination started, which gave us only a few weeks in total. It was very hard, this project.

LH Were you able to hire a big team to work on this?

MM Not a big team. We hired a team of five or six people through the Ministry for one month for shooting and postproduction. We hired them through the company al-Muasir. They helped with that.

LH *For casting secondary school teachers, was the process similar to what you were doing in Madrasatna 1 and 2?*

MM Casting for high school is a bit different. You are not just casting but testing the teacher through the whole process. Since they are not reading a script, you have to see what ideas each teacher will provide for the episode. How will he or she explain the material visually? Also, the commitment is very important because we started recording in April (2021). That was extremely tight. For the secondary teachers we did not recruit through social media, but through word of mouth. We had the same process with asking them to send a three-minute tape. You know, here in Egypt there are a few very famous teachers. In the beginning we cast them but did not end up working with them. This experience proved that the famous ones are not the best. The main issue was that they were not ready to compromise on their content. They saw it as holy. In terms of working on their episodes and material, they were not willing to spend like two more hours to get the best product. The stars are not into that, I mean, they have bulky schedules. When you are taking two or three hours from them you are taking like 15,000 pounds (in private lesson fees). And I cannot pay that. So, even though we started with famous teachers, at the end of the day we stuck with the teachers who were willing to work with the different publishing companies that were providing the content. The content for high school was critical, everything was critical.

LH *It seems like you are constantly under time pressures.*

MM Yes, but it is less stressful than producing news programs, which is what I used to do. I am a happier person now.

7. The Future of Children's Television in Egypt

LH *How do you see the future of educational television and children's programming in Egypt?*

MM We do not have content in Arabic for kids, nothing at all in Egyptian Arabic. We do not understand other accents. So, providing something like the kids' channels from Al Jazeera and MBC Saudi Arabia, things like that, this will never work in Egypt because they are not in Egyptian accents. We also need stories that are not so American, things our kids can relate to. So, there is a huge demand for entertainment for kids, useful entertainment. It is not just about the education and the training of the teachers. There is also a huge need for entertaining the kids. But there is nothing on TV, and the huge entertainment networks in Egypt never invest one penny in children's productions.

LH *You would think there would be more investment and interest with all the children in Egypt.*

MM I mean, it is very weird. I worked many years in entertainment channels, and they always say there are no advertisers for kids' entertainment. I do not get that, really. Madrasatna has the potential to be the children's network.

LH *How do you feel about your career shift to children's and educational programming?*

MM Doing entertaining education is the most interesting project I have ever done. I am learning new things about education, about the child, about educating people. It is the first time that I feel that there is always a message, a real message. I am quite sure that the kids who stay home and learn their curriculum from Madrasatna will be just fine. I like the product, I am proud of it, it is very different. I never have guilt trips, like you have when you're working on TV (laughs). I like this project a lot.

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23. Digital Transformation and the Changing EdTech Landscape in Egypt

Hany Zayed

Abstract

This chapter reviews the digital transformation of Egyptian education at the two levels of the state and private markets. The state is expanding the digital infrastructure, incorporating digital devices, digital assessments, digital content, and digital learning platforms into the K-12 years. At the same time, the private sector is expanding an unregulated EdTech ecosystem exponentially. It poses the questions: How is Egyptian public education being digitalized and who are the main architects of this process? How is this digitalization spurring a private and unregulated EdTech landscape with new players, scope, and rules? What happens when the state and private markets come into contact, coincide, and collide? The chapter raises broader questions about digital educational futures, the risks of individualization and edutainment, the dangers of datafication and surveillance, and the transformation of, and assault on, educational institutions and roles.

Keywords

digital future, educational television, edtech, edutainment, individualization, platforms

1. Egypt 2.0: Building a New Digital Republic

At the end of 2018, the average internet speed in Egypt was 5.6 megabits per second and Egypt ranked 40th out of 43 African nations... Today [in 2022], the average internet speed is 41 megabits per second and Egypt ranks first among all African nations.

Amr Talaat, Minister of Communication, and
Information Technology¹

Since 2018, the Government of Egypt has been tirelessly working to realize its ambitions for a 'New Digital Egypt'. With roots in the Constitution of 2014 and the Sustainable Development Strategy of 2016,² this digital transformation project has been central to the vision for the New Egyptian Republic (*al-gumhuriyya al-gadida*) which began soon after President Abdel Fatah El-Sisi assumed office in 2014 (El-Sisi 2021). This far-reaching and deep-seated project with its aim to 'usher [a] transition to a digital society and build a strong digital economy' (MCIT 2021a and 2021b), entails digitalizing governmental operations and citizen services, forging an entrepreneurial ecosystem that encourages digital innovation and creativity, and raising the digital skills of Egyptians (Egyptian Cabinet 2020, Ghoneim 2021: 13, Talaat 2021).

Enormous resources have been directed from the national budget to enhance the state's digital infrastructure. Between 2019 and 2021, the state invested sixty billion Egyptian pounds to amplify its fixed Internet speed by a factor of eight. As the opening quote shows, this increase catapulted Egypt from the fortieth position amongst African nations to the first (Egyptian Presidency 2022, MCIT 2022b). In addition, the state is set to invest a further forty billion Egyptian pounds in the coming three years (2023-2025) to connect more than four thousand villages, three million households, and almost sixty million citizens with affordable high-speed

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- 1 In October 2022, Egypt won the Ookla Speedtest Award and was announced the fastest country with fixed Internet speed in Africa (MCIT 2022b).
 - 2 The Constitution of 2014 states that 'the State shall develop a comprehensive plan to eradicate alphabetical and digital illiteracy among its citizens of all ages' (Article 25). The SDS proposed 'building a digital society', integrating 'Information Technology into the various sectors of the economy', and the 'transformation of Egypt into a global digital hub' as part of Egypt's economic development vision (MoPMAR 2016: 44-45, 69-74).

Internet (MCIT 2022c, Talaat 2021). To monitor this growing digital system, the state created the Supreme Council for the Digital Society (SCDS) in June 2015. It oversees and regulates policymaking with regards to state-digitalization (Official Gazette 2015a, 2015b, and 2022).³

Within this context, this chapter asks three key questions pertaining to the state, markets, and the future. First, how is Egyptian public education being digitalized and who are the main architects of this process? Second, how is this digitalization spurring a private and unregulated EdTech landscape with new players, scope, and rules? Third, what happens when public forces of the state and private forces of the market come in contact, coincide, and collide? What are the broader implications and urgent concerns emerging from this digitalization with regards to digital educational futures?

2. The Digital Transformation of Egyptian Public Education

The Egyptian Prime Minister Mostafa Madbouly (appointed 2018) announced that two main elements were needed to craft a New Egyptian Citizen and ensure readiness for the future labor market, namely ‘building the technical capabilities of young people... and developing the Education System’ (Madbouly 2022). To implement this vision, the President appointed Dr. Tarek Shawki as Minister of Education and Technical Education (MOETE) in February 2017. Believing that ‘education is one of the central pillars for manufacturing awareness and building the Egyptian person’, Shawki laid the groundwork for an advanced New Education System for all citizens where digital transformation was a key component (Shawki 2021f). With this educational overhaul, not only would Egypt improve its international competitiveness and rankings, but it would also bring education ‘back to its glory days’ (Shawki 2021l). Shawki described the digital transformation of Egyptian education as no less than an ‘Egyptian epic’ and a ‘revolution’ (Shawki 2019).

3 In addition to the SCDS, new legislations include the Supreme Council for Cyber security in 2017, the National Payment Council Law of 2017, the law of Combating Information Technology Crimes of 2018, the National Council for the Artificial Intelligence of 2019, and the Data privacy Protection Law of 2020 (Ghoneim 2021).

Many people were involved in the digital transformation of Egyptian public education, but two chief architects stand out: Dr. Tarek Shawki, the Minister of Education and Technical Education (2017-2022) who provided the vision; and Dr. Ahmed Daher, the Deputy Minister of Education for Information Technology and Digital Learning (2019-present, as of 2025), who provided the technical knowhow.⁴ 'From the moment we thought about bringing technology in', Shawki recalled, 'Daher and I struggled, and this struggle would be worthy of a television series' (Shawki 2021d).

Both Shawki (on the level of vision) and Daher (on the level of implementation) harbored techno-solutionist dispositions, the idea that technology can fix complex social problems (Morozov 2013: 5-6). They often approached complex educational issues as 'engineering problem[s]' with technical and computable solutions (Shawki 2022). Not only would those technological solutions 'fix' education, but the thinking was that they would 'transform' educational governance, learning, and pedagogic practices. While celebrated by some in the government and the technology industry, Shawki was vilified by many in the educational community including students, parents, teachers, and education leaders. In contrast, Daher maintained a discreet presence. He labored quietly to operationalize Shawki's visions. In so doing, he enjoyed less fame and less public scrutiny.

Supported by a 500-million-dollar loan from the World Bank (2018),⁵ the digital transformation of Egyptian public education involved connecting general secondary schools via fiber optic cables and providing them with Internet connectivity; distributing tablets to secondary students and teachers; installing smartboards in secondary classrooms; administering digital assessments; and provisioning digital content and digital learning platforms. This form of digital transformation was oriented towards

4 With a doctorate in Computer Engineering from the Egyptian Military Technical College, Ahmed Daher's professional experience traversed the military, academia, business, technology, and the government. His professional skills oscillated between computer engineering (e.g., cloud computing, artificial intelligence, cyber security, and educational technology), business (e.g., business development, analysis, consulting, planning and strategy), their nexus (e.g., IT strategy and management, and software project management), and technology regulation (e.g., setting the cloud computing standards for Egypt) (Daher 2022).

5 More than half of the World Bank loan (\$255 million) has been earmarked for digitalization-related reforms. In particular, \$155 million was allocated to assessment reform and digitalization, and 100 million to educational technology, digital infrastructure, and digital learning resources (World Bank 2018:17-23).

personalized and individualized self-directed learning, or ‘self-reliance’. As Shawki intoned, ‘Students need to know how to teach themselves’ (2021c). It also embraced principles of ‘edutainment’ whereby learning was to be both fun and enjoyable. As David Buckingham (2007: 35) puts it, edutainment represents ‘a hybrid mix of education and entertainment that relies heavily on visual material, on narrative or game-like formats, and on more informal, less didactic styles of address’ (see also Okan 2003). In this sense, edutainment is a precursor of the gamification of education, the ‘use of game design elements in non-game contexts’ (Deterding et al. 2011).

The digital transformation of Egyptian public education rested on setting up a robust digital infrastructure that connected schools, classrooms, students, teachers, and the MOETE (see Fig. 23.1).

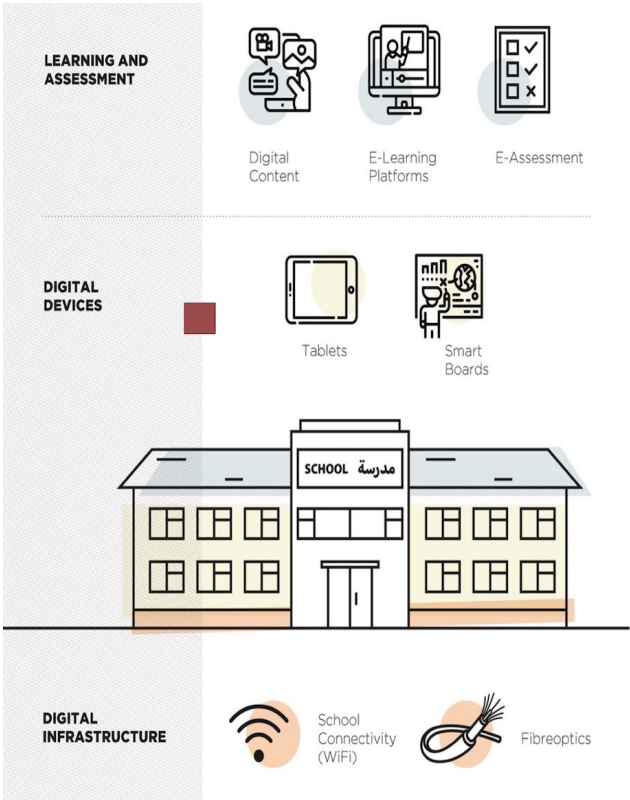


Fig. 23.1 The Digital Transformation of Egyptian Public Education, graphic by Hany Zayed.

Connecting schools cost five to six billion Egyptian pounds (Shawki 2021a) and was implemented in collaboration with government and private corporate entities. It involved connecting around 2,500 public general secondary schools in Egypt's twenty-seven governorates with fiber optic cables for high speed WiFi Internet; installing servers, storage, and firewalls in IT data rooms (Fiber Misr 2018), and installing security cameras in classrooms (Al-Hekaya 2021). To overcome persistent digital divides among the student population, the MOETE provided subsidized SIM Cards for students for out-of-school data connectivity. Even with these efforts, 'universal school connectivity' has remained a work in progress. In some rural and mountainous areas, connectivity is fragmented and uneven at best.⁶

Between September 2018 and 2020 alone, the MOETE equipped close to forty thousand public general secondary classrooms with Promethean ActivPanels for use in teaching and learning, and around thirty-six thousand smartboards were fitted in public general secondary classrooms (MOETE 2021, Shawki 2020b, 2020c). In early 2022, the government announced the inauguration of a Promethean

6 The coronavirus pandemic vastly accelerated the digital transformation of Egyptian education (Shawki 2020d; 2020e), and forced people to be active players in their learning (World Bank 2020). However, only eleven out of twenty-five million students were able to access its digital platforms. In an attempt to reach this left-out majority, the MOETE launched the Madrasatna Television Channels in October 2020 (Madrasatna 2022) for Grades 4 through 12 (see Chapter 22 in this volume). Madrasatna was intended to be watched by students at home and at schools through the classrooms' ActivPanels (Madrasatna 2022). In October 2020, the MOETE created the Madrasatna YouTube Channels to share the aired content on social media platforms like Facebook, Instagram, TikTok, and Twitter. In 2022, the MOETE launched 'Madrasatna Plus', a mobile application that utilizes principles of edutainment and gamification (Deterding et al. 2011; Sailer and Homner 2020). Madrasatna is becoming not only an ecosystem but also a marketplace that organizes the consumption of public and private educational materials. Madrasatna, in other words, seeks to be both the Netflix and the Amazon of Egyptian education. As a corollary, digitalization also facilitated the commercialization of education where private commercial providers, such as Microsoft, Pearson, and Britannica, were increasingly embedded in public education infrastructure, provision, governance and delivery (Cone et al. 2021: 3-4; Williamson and Hogan 2020: 8). Finally, it enabled the datafication and the dataveillance of education (Lupton and Williamson 2017; Van Dijck 2014).

manufacturing plant to supply its local needs of ActivPanels (Prime Ministry 2022, Yehia 2022a). Notably, the MOETE distributed Samsung tablets free of charge to almost two million students and seventy five thousand teachers. Through their unique serial numbers, those tablets were tracked to their users. ‘We know what they [students] are doing and what they are watching’, Shawki cautioned (Al-Hekaya 2021). The Ministry was able to push their own applications, or simply turn the tablet ‘into a brick’, as Daher put it (see Chapter 18 in this volume). In March 2022, the MOETE announced the inauguration of a Samsung manufacturing plant. The tablets produced in the country would be used both to supply local needs, and also be designated for an export market (MCIT 2022a, Saleh et al. 2022).

The digital infrastructure which included tablets and smartboards for education were important for three purposes. First, they were critical for creating, administering, and marking new digital assessments which relied on new forms of questions that measured understanding, application, and analysis of learning outcomes as opposed to rote memorization (Shawki 2021i, 2021j, 2021k). Second, they were critical for providing digital content, including digitalized textbooks, instructional videos, interactive questions, practice exercises, and audio files, available on the Egyptian Knowledge Bank’s (EKB) Learning Management System (LMS) (Shawki 2021a, 2021g, 2021h).⁷ Finally, they were critical for accessing digital learning platforms launched by the MOETE. In addition to the EKB, those included eight platforms launched during the COVID-19 pandemic to facilitate remote and hybrid learning, Study.EKB, Edmodo, Edu Stream, Virtual Streaming Classes, Thanaweya.net, Egyptian Education Platform (Eduhub), Hesas Masr, and Madrasatna (see Fig. 23.2).

7 Between February 2019 and November 2020, the EKB LMS had one and a half million registered accounts, close to fifty thousand resources with more than three hundred million views (Shawki 2020a, 2020d, 2020e).

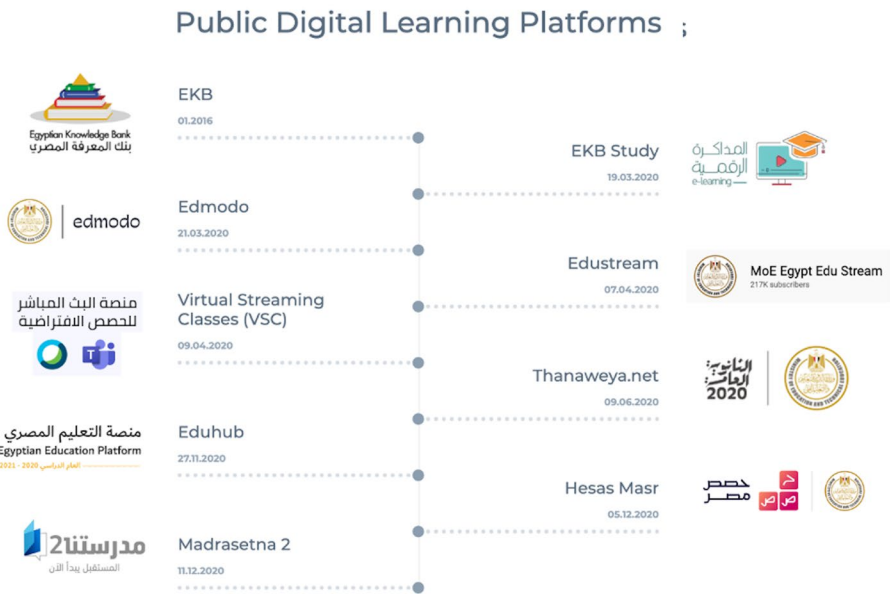


Fig. 23.2 Timeline of Public Digital Learning Platforms from 2016-2020, graphic by Hany Zayed.

This massive investment in digital infrastructure, devices, assessment, content, and platforms, paved the way for two critical and interrelated projects: the Digital Transformation of the MOETE, and the Digital Identity Project. The former, entailed connecting all governorates, administrative districts, directorates, and schools with the Ministry by way of digitalizing administrative processes associated with schools and collecting, storing, and organizing individual-level data about students, teachers, and assets. Building on this, the Digital Identity Project (DIP) records and stores data about students (such as educational attainment, attendance, tablet access and usage, personality traits and health status), teachers (such as training and job performance, personality traits, loyalty and belonging), and schools (such as number of classes and teachers, maintenance, class densities and technological infrastructure) in central and secured databases. This data, much of which is attached to Microsoft Email credentials, was not only about ‘surveillance’ and

‘monitoring’ (Al-Hekaya 2021), as the Minister affirmed, but was supposed to improve governance, decision-making, and efficiency.⁸

3. Charting Egypt’s Nascent EdTech Ecosystem

Egypt’s digital transformation served as the catalyst for a nascent private EdTech ecosystem that is lucrative, ad-hoc, unregulated, and does not operate according to a set of firmly established rules or norms (see Fig. 23.3).



Fig. 23.3 Overview of Egypt’s private EdTech landscape, graphic by Hany Zayed.

Egyptian EdTech, with its expanded scope, new players and supporters, and changing business models, appears to be the new frontier for investment. Egypt’s blooming EdTech landscape now includes Pre-K, K-12, and higher education. It covers both public and private education, formal and informal education, and comprises institutional, continuous, and lifelong learning. According to Holon IQ, a prominent market research firm concerned with global EdTech, Egyptian EdTech subsectors include Tutoring and Test Preparation, Workforce and Skills Management, Digital Content and Educational Resources, Education Management Systems, Games and Simulation, Online Learning,

⁸ For example, it would help identify the skills needed for the job market, improve teacher allocation and training, govern tablet distribution, and map class densities (Shawki 2021f).

Advanced Technologies (AI/AR), Massive Open Online Courses (MOOCs), Language Learning, and Career Planning and Mentoring (Holon IQ 2022a).

Egypt's nascent EdTech ecosystem and EdTech startups⁹ include small and medium enterprises (SMEs), private schools, private tutoring centers, extracurricular book publishers, national companies, and transnational corporations. Many EdTech entrepreneurs rely on the support of 'ecosystem builders,' a burgeoning network of actors that include Venture Capital Firms, Angel Investors, Incubators, and Accelerators from both the public and private sectors.¹⁰ Those provide financial investments in emerging EdTech companies and non-financial support like idea generation coaching, business plan writing, and investor matching.¹¹ Holon IQ came to play an outsized role in Egypt's EdTech ecosystem (see Holon IQ 2022c and 2024). In addition to directing entrepreneurs and startups to growing and profitable EdTech fields (for example, Artificial Intelligence), Holon IQ's insights are directing major tech-corporations and edu-businesses to promising EdTech domains (to be penetrated) and companies (to be acquired). Finally, they direct investors, such as venture capital firms and angel investors to particular EdTech fields and startups.

For example, since 2021, Holon IQ has been directing its gaze to, and producing market intelligence on, EdTech in the Middle East and North Africa, including Egypt (see Fig. 23.4). In 2022, they chose Cairo as the location for their 2022 Global Impact Summit in the MENA region,¹² signaling the importance and promise of Egypt as a frontier market in EdTech. Since 2021, Nahdet Misr's (established in 1938) EdTech-focused Venture Capital arm EdVentures has also been collaborating

9 As of September 2021, Egypt had forty-two active EdTech startups (out of a total of 562 tech startups); the largest share of EdTech startups in the MENA region (Holon IQ 2022a; ITIDA and Disrupt Africa 2022).

10 The Ministry of Communication and Information Technology's (MCIT) Technology Innovation and Entrepreneurship Center, for instance, supported 7,200 entrepreneurs, 1,300 startups, and helped establish more than 250 startups as of 2021 (MAGNiTT and ITIDA 2022).

11 In 2021, Egypt had thirty-seven active accelerators and incubators (ITIDA and Disrupt Africa 2022).

12 The Global Impact Summit brings together major players in the EdTech field (government, investors, and corporate) in different geographies to discuss EdTech and educational futures.

with Holon IQ and using their market insights to identify gaps in Egypt's EdTech market. With those insights, EdVentures exhorted entrepreneurs and startups in late 2022 to direct their efforts, i.e. their investments, to 'untapped' and lucrative opportunities areas including Artificial Intelligence (AI), Augmented Reality (AR), and Pre-K digital platforms. EdVentures promised financial and non-financial support in case entrepreneurs and startups followed their direction. In this sense, Holon IQ functioned as a 'market maker', as Ben Williamson put it. It 'mobilized data-driven technology platforms to assess the market value of educational technology companies, and support venture capital to invest in products with high predicted future value' (Williamson 202: 3).

With more than sixty million Egyptians under thirty years (around 61% of the population), and twenty-eight million students in pre-tertiary and higher education (around 28% of the population), Egypt's private education represents a titanic market with significant return on investment potential (CAPMAS 2022a, 2022b). To get a sense of the enormity of this market, in 2020 Egyptian households spent almost fifty billion Egyptian Pounds on private tutoring and exam preparations in pre-tertiary education alone (EIPR 2021, Gamal 2021, Raslan 2020: 110). Importantly, this profit potential was bolstered with the COVID-19 pandemic. As Hatem Sallam, partner in Almentor Education, a leading private EdTech company puts it, with the coronavirus pandemic, 'the level of acceptance of blended and e-learning changed 180 degrees and became a matter of fact'. It was no longer a matter of if education technologies would be used, but a matter of how (Sallam 2020).

To realize this profit potential, EdTech companies, with the help of their supporters, adopted a variety of business models different from 'traditional' private education. Whereas 'traditional' private education involved a simple monetary exchange between two or three parties (for example, students/parents, teachers and/or private tutoring centers), private EdTech players are making money through direct monetary transfers (informal payments between students and teachers), subscriptions (periodical payments for access to a digital learning platform), freemium models (where part of the educational content is free and part paid), and advertisements (where student data is monetized and sold to third parties for targeted advertisements). Yet, those business models are neither mutually exclusive nor fixed. Many players in the space

rely on more than one revenue stream. They are constantly ‘pivoting’ their business models to pursue more profitable endeavors.

Crucially, those new revenue generating schemes seem to be operating outside the gaze of the state.



Fig. 23.4 Holon IQ’s 2024 Middle East and North Africa EdTech 50, 10 December 2024, <https://www.holoniq.com/notes/2024-middle-east-north-africa-edtech-50>

The role of the Egyptian state in the private EdTech landscape has not been straightforward. On the one hand, through the Ministry of Communication and Information Technology (MCIT), the state has been laying the ground for the digital education market by providing digital infrastructure, passing regulations, enacting strategies, imparting students across levels with digital skills, and supporting entrepreneurs and startups. On the other hand, through the MOETE, the state has been supervising and overseeing (trans)national private EdTech companies formally contracted for its own digitalization needs. Those include, for example, Pearson in digital assessment, Discovery in digital content, and Almentor in digital platforms. Beyond those, the state does not seem invested in, nor have the bandwidth, to regulate private digital pedagogical spaces or the actors occupying them. This means that the state is not regulating EdTech companies who have direct commercial relations with students, parents, and teachers (Business to Consumer),

or those with direct commercial relations with schools, private tutoring centers and other businesses (Business to Business). In fact, MOETE officials expressed pleasure that those companies were teaching students how to use devices, imparting them with twenty-first-century digital skills, and forcing them to learn online on their own. The state is also not regulating ecosystem builders who provide (non)financial support to those companies, like venture capital firms. In other words, in this nascent ecosystem, EdTech players and their supporters are operating in a free, uninhibited environment that lacks oversight, accountability, and responsibility.

4. Reimagining Digital Education Futures

With Egyptian education teetering on the cusp of major changes as a result of unrestrained digitalization, a number of critical issues and urgent concerns have emerged. The first pertains to the purpose of education. From the state's perspective, the digitalization of public education would produce a 'New Egyptian Citizen', a skillful, innovative, competitive, responsible, independent person who is passionate about technology and ready for the Fourth Industrial Revolution. This new citizen would lead the New Digital Republic and contribute to its economic development and modernization. On the other hand, through their different platforms and 'solutions,' private EdTech companies claim to impart students with twenty-first-century skills necessary for the future labor market. Other players, such as EdVentures, go a step further by claiming their venture capital efforts support Egypt's economic development. In short, with the digitalization of education, the economic imperative of education becomes cemented.

In addition to the 'why' of education, both the MOETE and private EdTech market are aligned in the 'how'. To attain its economic ends, EdTech initiatives, whether initiated by the public or private sectors, integrate principles of individualization and edutainment/gamification. The MOETE launched platforms with more personalized, individualized, and gamified learning modalities and called for more 'self-reliance' in education. 'Out of all of those [platform] options', Shawki (2021b) states, 'every student will find something that fits them and is comfortable for

them'. This celebratory approach to individualization and gamification begs certain questions.

First, individualization views students as self-interested and self-managing. It assumes that they have the requisite judgement, willingness, knowledge, motivation, and ability to freely and entrepreneurially choose among resources, teach themselves, and cultivate skills for the job market (Selwyn 2016a, 2016b, Selwyn 2017: 150-151). Individualization shifts responsibility from the state, the school, the teacher, and broader structures to the student. Importantly, this individualization changes the role of the teacher to a mere facilitator or coach. Second, for almost four decades, scholars have been raising concerns about edutainment and gamification, heavily criticizing the lack of empirical evidence for their claims. As far back as 1985, Neil Postman cautioned against the idea of seeing learning as 'a form of entertainment or, more precisely, that anything worth learning can take the form of an entertainment, and ought to' (Postman 1985: 154). More recently, scholars have pointed to the empirical vacuity of edutainment, their techno-utopian thrust, their limited advantages, and their long term harmful effects (Okan 2003). As Jarvin (2015: 34-35) argues, edutainment is better suited for 'learning and memorizing facts', engaging in 'lower order thinking skills' and raising awareness. Egypt's case raises concerns with regard to modelling learning and pedagogy on social media platforms like TikTok. Education risks becoming about the 'user experience'. The Ministry of Education will be acting more like the Ministry of Edutainment and the Netflix and TikTok of Education.

With individualization and gamification, Egypt's far-reaching and deep-seated educational digitalization raises additional issues regarding surveillance and datafication—the production, capture and usage of immense amounts of data. On the one hand, through digital devices, assessments, content, platforms, and its Digital Identity Project, the state is able to amass massive amounts of student data pertaining to tablets usage, learning platform engagement, school attendance, learning outcomes attainment, students' health, psychology, and grade achievement, to name a few. As Shawki intoned, the digitalization efforts were 'not surveillance, only monitoring' (Al-Hekaya 2021). Even though the MOETE refrains from calling it surveillance and maintains that it is for improving governance and decision making, every step of students'

education is increasingly being monitored by the state. On the other hand, students' engagement with private EdTech platforms is also producing copious amounts of data that are used to improve user experience as well as being sold to third party data brokers and monetized to advertisers. Together, those twin processes of digitalization and datafication sound the alarm about the invasive tracking of students who are leaving steep data footprints. Coupled with a weak regulatory framework, they raise questions about the amplification of state and commercial dataveillance, the ethics and ends of data collection, storage, ownership, and usage, the efficacy of cyber security efforts, the production of the 'datafied child' (Lupton and Williamson 2017: 780) and the infringement on their (digital) rights, both by public and private entities.

The influx of private commercial providers in Egyptian digital education spaces means that they are not only embedded in, and profiting from, the education infrastructure, but they are also critical in reshaping educational practices and reimagining educational futures. One site of contention is the school. While Ahmed Daher maintained that 'the school is the foundation for the educational process and the teacher is the main element' (Madrasetna 2022), a prominent private EdTech player challenged this official vision, positing that,

My personal dream is to see in the region, in Egypt, and maybe across the world [...] a different vision of education [...] We need to get out of the traditional K-12 and University system [...] with [...] a number of students sitting in the same class taking the same material [...] No more. We have to think out of this box [...] These days we need personalized learning [...] We have to change this. We have to break this taboo (Holon IQ 2022b).

This quote was made by Dalia Ibrahim, the CEO of Nahdet Misr Publishing Group (established in 1938) and the founder of EdVentures, a prominent venture capital firm geared towards EdTech entrepreneurs and startups (see Chapter 15 in this volume). Ibrahim espouses skill-based tech-enabled personalized learning journeys with principles of edutainment embedded in them. As she more concisely, and perhaps more ominously, articulated at a session titled 'Web 3.0 in Education' in Techne Summit in Alexandria, Egypt (5 November 2022), 'institutions will fall in the future'. With this vision, education risks moving from state institutions to corporate platforms. It also risks moving from being

a public good to a private commodity (see Cone et al. 2021: 3-4; Selwyn 2021; Williamson and Hogan 2020: 8). What is critical (and dangerous) about this particular vision is that it commands a vast armament of discursive and material resources to realize it. In other words, in their 'disruptive' visions of digital educational futures, private EdTech players are assaulting traditional notions of education. They are promoting the de facto deinstitutionalization of education, the decentralization of learning, the disemboweling of schools, and the deprofessionalization of teachers and teaching.

This points to a broader issue. A new class of stewards and custodians are driving Egypt's digital education ecosystem. This class rarely includes members of educational communities, such as teachers or education specialists. Instead, it consists of local and transnational entrepreneurs, startups, technology corporations, edu-businesses, venture capital firms, angel investors, and market intelligence firms mostly working at the nexus of technology and business, not education. Armed with an extreme and unsubstantiated form of techno-utopianism and techno-solutionism, these actors speak in a similar language about what education is (a set of twenty-first-century 'skills'), what its purpose is (for the labor market), how it should be pursued (through personalized learning and gamification), and the outdated role of traditional institutions (schools) and professional educators (teachers). With sufficient discursive and material resources to reimagine and reshape education, they are capable of effecting a top-down change in education in collaboration with, and sometimes in opposition to, state actors, who are failing to regulate those educational spaces and losing the battle of shaping educational futures.

5. Epilogue

In a sudden cabinet reshuffle in mid-August 2022, Tarek Shawki was replaced as the Minister by his deputy for Teacher Affairs, Dr. Reda Hegazy. Hegazy made it clear that 'the New Education System will continue because it is the state's philosophy' (Abdel-Mo'men 2022). In July 2024, Reda Hegazy was replaced as Minister by Mohamed Abdel Latif. In a session with the Egyptian parliament, Latif assured the body that he was continuing the education priorities as laid out in

Egypt Vision 2030 (MOETE 2024). Throughout these changes at the ministerial level, Ahmed Daher remained in his post as Deputy Minister to continue overseeing the digital transformation of Egyptian public education, including the integration of Artificial Intelligence (AI) into schooling and learning (see Chapter 1 in this volume).

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PART II

TEACHER AND STUDENT PERSPECTIVES

24. The Learning Journey of a High School Student from the Historic Class of 2021

Linda Herrera and Nairy AbdElShafy

Abstract

Out of roughly 600,000 students who started high school in 2018 when the Education 2.0 reforms were being rolled out, this chapter profiles the learning journey of 'Laila' and her friends. It uses a technique of longitudinal oral history research to record three turbulent school years starting with Grade 10 when all students received tablets and the ministry launched multiple digital initiatives, Grade 11 during the COVID-19 pandemic with the school shutdowns, and Grade 12, a year of hybrid schooling and intense preparations for the Thanaweya Amma university entrance exam. Some takeaways are that even as electronic exams were supposed to eliminate cheating, and digital learning platforms were meant to serve as an alternative to private lessons, both remain widespread and have adapted to new technologies. Students often reap real benefits from the digital tools and platforms but still want and value strong teachers and need the in-person time together with classmates and school communities.

Keywords

blended learning, COVID-19, digital platforms, distance-learning, Egypt education reform, Egyptian Knowledge Bank, electronic exams, flipped classroom, private tutoring, tablets

1. Egypt's Historic Class of 2021

In a press conference on the Thanaweya Amma results for the 2020/2021 academic year, Minister of Education and Technical Education Dr. Tarek Shawki (2017-2022) proclaimed, 'This year is very special. We consider the Thanaweya Amma class of 2021 a historical one' (Shawki 2021). This graduating class was the first cohort to start high school under an ambitious reform agenda that included the digital transformation of many aspects of learning and assessment. During the 2018/2019 academic year, the roughly 2,500 public high schools (Grades 10-12) across Egypt were connected to high-speed optic fiber WiFi, in addition to a host of other digital initiatives (see Chapter 23 in this volume).¹ Like his predecessors, the Minister also attempted to tackle the predatory system of private tutoring and the endemic problems of cheating, though those proved more elusive. Unbeknownst to everyone at the time, a global pandemic would strike one year into the reform. It served as an accelerant of digital transformation, but undoubtedly also led to worrying learning loss across much of the population (Biltagy 2022). The Minister, an engineer by training, harbored decidedly techno solutionist tendencies. This refers to the idea that different types of social problems, whether having to do with education, the environment, infrastructure needs, security, and other domains, have a technological solution.²

Out of roughly 600,000 students who started high school in 2018 and made up this historic cohort, we profile the learning journey of a student by the name of 'Laila'. Her neighbors 'Mohammed' and 'Mai', siblings in the year below her, often joined the conversation. Through a technique of longitudinal oral history research, with the Education 2.0 reform being the key historical event under investigation, we track Laila's three year high-school journey.

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- 1 The costs of the tablets were largely covered by a World Bank loan of 500 million USD (World Bank, 2018). Egypt's communication ministry had confirmed that it had procured somewhere between 700,000 and one million tablets from Samsung at a cost of EGP 2.4 billion, roughly EGP 1,400 per tablet (\$80) to distribute to all students entering Grade 10 and their (Ahram Online, 2018).
 - 2 Technological solutionism, a term initially coined by Evgeny Morozov (2013) has been the subject of much debate and caution (Saetra 2023).

2. Research with Laila

Laila grew up in a low-income neighborhood on the edge of Cairo. Though the area appears impoverished, it has basic services. Laila's father used to work as an employee in the telecommunications sector but retired by the time she was in high school. Her mother was a housewife. In 2011 when Laila was nine years old, she started attending the activities of a local NGO working in non-formal education, one of the many initiatives for non-formal education born out of the 25 January Revolution of 2011. One of the authors (Nairy) was a project manager there and got to know Laila and her younger brother. The NGO offered free computer access. Many of the local kids set up Facebook accounts and stopped by regularly to access their social media. It also offered after-school classes including art programs where the kids could express themselves and take on leadership roles. Laila had a sweet and serious disposition and was always reliable. She enjoyed extracurricular activities like crochet, embroidery, and coloring.

The NGO established good relations with the neighborhood and earned a reputation as a trustworthy organization. Laila was a regular at the center through middle school but had less time when she started high school. She had to commute about an hour each way. She said it was worth the effort since the school had a good reputation for a public school. It was stricter and more demanding than her middle school. Unlike many high schools, her school enforced attendance. She had ambitions to go to university to study physiotherapy, a subject she read about at the community library where she also sometimes volunteered. She wanted to work in a profession like physical therapy or teaching physical education. She entered the science section in her high school.

Many of the kids from the NGO friended Nairy on Facebook and they stayed in touch even after they stopped attending the programs. They tagged each other on things related to the NGO and sent each other birthday greetings. When Nairy reached out to this group in 2020 at the start of the pandemic to ask if anyone wanted to participate in a research to document their high school lives, Laila was quick to respond, as did her friends Mohammed 'Moe' and Mai (pseudonyms). Since schools had recently closed, students had more time on their hands.

As a research methodology, oral history draws out stories and oral narration around an event or period, which in this case is the first three years of the Education 2.0 reform (2018-2021). We wanted to explore the interplay between structure (the education system) and agency (ways students interact with and navigate the system) (Cole and Knowles 2001; Herrera 2012). While narrative research is often employed to elicit memories and construct events and histories from the past (Masalha 2008, Portelli 1981 and 2009, Ritchie 2003), it can also be used as a means to build a record of how people are navigating and making sense of policies, institutions, and events in the present (Chowdhury 2024; Hall & Barron 2021).

Ideally, oral history interviews should be face-to-face to build personal rapport, read non-verbal communication cues, and share downtime before and after an interview (see Herrera and AbdElShafy 2020). However, due to the pandemic, interviews were conducted remotely, and mainly on Facebook Messenger at the request of the students. Interviews took place monthly and sometimes bi-weekly over one year, and periodically over the succeeding year for a total of twenty-one interviews.³ Nairy already knew the participants' mothers through her time at the NGO, and they provided consent for their students' participation in this study. All interviews and communications took place in Arabic.

During the first six months of virtual meetings, conversations followed a similar structure starting with updates, discussions about study patterns, feelings about what was going on at school, and other personal news. Over time, Laila and her friends often took the lead in the conversations. They came to the sessions with topics in mind and asked each other questions. On several occasions, Laila reached out to Nairy via Facebook Messenger to share updates, explain how she came to reconsider a position or practice she had previously talked about, or report a new discovery. Laila struck us as an especially fitting student to profile for this chapter because

3 Many thanks to the Education 2.0 Research and Documentation Project team who contributed in multiple ways to this research. Nairy AbdElShafy and Hany Zayed carried out the interviews with Laila and her friends. Heba Shama and Helen Gabrah provided regular feedback and guidance on the interviews, as did the project director Linda Herrera who co-designed and supervised the research from inception to completion. The names of all students used in this chapter are pseudonyms to protect their identity and ensure their anonymity.

of her curious, intelligent, and reflective nature. We also considered the fact that as someone with limited financial means and social capital, she had to be especially resourceful in navigating her high school years to achieve her goal of going to university. (For a portrait of a student from the same cohort with a higher social class position, see Chapter 26 in this volume.) We supplement interviews with ministerial communications, news coverage, and reflections of teachers we spoke to during the same period, to provide additional context. As just one person, Laila does not represent a ‘typical’ high school student, but she is not atypical either. Her learning journey can offer insights into how students progressed (or not) through three consequential and unusually turbulent years of high school as the Ministry was trying to implement a ‘new education system’.

3. Grade 10: Digital Transformation of High School

In the lead up to the new academic year of 2018/2019, the biggest education media story by far was about the tablets. Every student entering Grade 10 would be issued a brand-new Samsung tablet at no cost (the cost was to the State as part of a World Bank loan).⁴ Students were supposed to use the tablet to connect directly to digital resources via the Egyptian Knowledge Bank (EKB) and take electronic open book exams with new kinds of exam questions. As the Minister explained, these questions were ‘scientifically designed to measure different levels of understanding, application and analysis’ (Shawki 2021). The tablet would enable an approach to exams that included voice answers, a written response using the keyboard, or a drawing using the tablet’s pen. Using Artificial Intelligence (AI) and cloud-based services, exams would not be identical but still measure a uniform set of learning outcomes and be at the same level of difficulty (Shawki 2018). The Minister explained that the automated exam system would randomly select questions from the question bank just prior to the exam, making it more difficult to cheat (Shawki 2021). Overall, the tablets were part of a larger goal of the reform to change the culture of learning towards more self-reliance and critical understanding.

4 The five-year World Bank loan ‘Supporting Egypt Education Reform’ was aligned with Egypt’s ‘2030 Vision.’ For more information see <https://projects.worldbank.org/en/projects-operations/project-detail/P157809?lang=en>

The tablets were supposed to arrive at the start of the academic year 2018 in September, yet the full inventory of 750,000 tablets were not available until mid-November.⁵ When Laila first received her brand-new tablet, she was happy and excited. She called it 'a fool's happiness'. She soon realized that it was programmed in a restricted way, and she could not use it for 'fun things'. Still, she took care of it by keeping it clean and protected. She started having self-doubts about being 'tablet illiterate' which caused her stress. A high school teacher who worked with students in the public school system cautioned:

They say that students are technologically smart, but I do not see this. Yes, they can access YouTube and use TikTok better than us. But when I ask them if they can open an email account, or navigate online learning platforms, or use PowerPoint to prepare a presentation, the answer is almost always, 'No'. They use technology, yes, but they use it for different aims (Public High School Teacher, 2020).⁶

Laila had trouble accessing digital platforms and downloading the required apps. She did not know where to turn for help and support. Her teachers seemed even less tech-literate and informed about the reform than her classmates. She said,

Our teachers do not know anything about the new tools or their value. There is a lot of uncertainty. They did not receive proper training.

She was frustrated by the lack of technical support at her school and the weak Internet access. Her worries intensified with the approach of the first electronic exams, something totally new for Egypt. The first trial e-exam in biology in March 2019 had serious glitches. Students were supposed to access exam questions online via a server, but the system crashed due to the heavy volume of users, and they could not complete the exam. Laila also experienced technical issues with her tablet. At one point it shut down unexpectedly. When she rebooted it, she found she had lost the question files. A similar situation occurred during the Arabic exam. Due to problems with internet speed, the Minister announced on 18 March 2019 that the Ministry would provide free Internet cards to

5 The tablets were delivered to schools well into the fall term, each one with its unique serial number and password connected to a specific student or staff.

6 Teacher interview conducted by Nairy AbdElShafy for the Education 2.0 Research and Documentation Project (10 April 2020).

students (Youssef 2019). Fortunately, these were trial exams and did not count towards students' final grade. During the more high-stakes exams in May these same problems surfaced in some educational districts, causing the Ministry to resort to paper exams (Al-Masry Al-Youm 2019). Laila worried that students in her year were guinea pigs and that they would pay the price for the government's lack of preparation for this big push towards digital transformation. She passed the year, but worried that these changes and mishaps would impinge on her goal of getting into the university.

4. Grade 11: Going Remote during COVID-19

Whatever adjustments Laila had to make during Grade 10, they paled in comparison to her second year when everything was eclipsed by the coronavirus pandemic. When schools throughout Egypt closed by government mandate on 15 March 2020, the country, like most of the world, pivoted to distance learning. In a press conference, Dr. Tarek Shawki was quick to point out that the government's investment in its digital learning infrastructure would serve the country well during this time of crisis. He emphasized three ways the Ministry was working to support pre-tertiary education. First, the entire curricula from KG1 to the Grade 12 was freely available in digital form on the Egyptian Knowledge Bank. Second, in just three days, the Ministry added the free educational technology platform Edmodo, whose interface was similar to Facebook, as the online Learning Management System (LMS). Edmodo (established in 2008) allowed teachers to remotely share content, distribute quizzes and assignments, and manage communication with students, colleagues, and parents. Shawki elaborated that through Edmodo, the Ministry was in the process of establishing virtual classes in 55,000 schools which added up to 6.5 million virtual classes. This network, he explained, 'will allow the ministry and teachers to communicate with students anywhere in Egypt, support each other, and work collaboratively' (Shawki 2020a). (Incidentally, in September 2022, Edmodo shut down all its operations. Serious questions emerged about what happened to the abundance of student data on its platform from not only Egypt, but countries around the world.)

Third, for those with difficulty accessing online platforms due to connectivity issues, the Ministry assured the public that all classes would be transmitted via television through the Madrasitna channels (see Chapter 22 in this volume). In subsequent weeks, the Minister introduced additional platforms and services.⁷ With this plethora of choices, Laila and her friends felt lost and confused about what to do. They scrambled to gather information, whether from Facebook, WhatsApp groups, television shows, or the media at large. They encountered conflicting information. The technology specialist at Laila's school started a WhatsApp group to provide brief updates about apps students would find on their tablet, and instructions about how to download other apps. Not all the students could figure out how to access the educational television channels, but Laila knew their frequencies and tried to help her classmates.

Previously, Laila had only used the tablet for the mandatory electronic exams and had not even tried to access the EKB. She was constantly afraid she would do something wrong. Several new applications like Webex automatically appeared on her tablet and she did not understand how she was supposed to use them. She could not figure out how to install Edmodo on her tablet, so she accessed it from her cellphone. Two of her teachers of physics and mathematics used Edmodo to update their course content regularly, but Laila felt overwhelmed and stopped checking it. By mid-April, a few weeks into the pandemic, most of Laila's teachers 'kind of disappeared' and she lost contact with her school. She remarked,

You feel that you're alone. You know? Like those musicians playing while the Titanic was sinking. The ship is sinking, and they continue to play music. I feel a little bit like that.

Within the space of a couple months, frustration turned into apathy, resignation, and boredom. Laila and her friend Mai talked about feeling unmotivated to study, and started to express hopelessness about the future, as illustrated in this exchange:

Laila: I feel like the future is a blob, it has no features. I feel like we are broken to some extent.

7 See the series of videos of the Education 2.0 Research and Documentation Project YouTube channel (<https://www.youtube.com/@education2-Egypt/videos>) with Dr. Tarek explaining the details of the new academic year of 2020/2021).

Mai: Me too. I feel that I need to change my plans, my goals, my dreams, everything because I am not sure I can reach what I have planned for myself.

At a point Laila snapped out of her state of despair and decided to take control of the situation. She developed a monthly schedule with a detailed daily action plan. She also started to more seriously investigate private tutoring options. Before the pandemic, Laila joined the lessons of one of the star physics' teacher, but in the 'budget' category. This meant she was not in the same room with the teacher but followed the live broadcast of his lesson from a large room in the lesson center where he gave his lessons. When the lesson centers closed due to the pandemic, the physics' teacher circulated a YouTube video explaining that he would continue his lessons online through a new subscription platform (*munasaq*). Any student who wanted to access his lessons had to make a payment of 150 EGP per month to the lesson center either in-person or remotely via Vodafone cash. This was just one example of how teachers-entrepreneurs were innovating with new business models during the pandemic.

In April 2020, Laila and her friends struggled with learning 'research skills' needed for the new open book tablet- based exams. Laila initially felt overwhelmed by all the platforms. But by May, she started independently exploring different YouTube channels and discovered learning apps which she began using regularly. Within two months she talked about how her research skills were improving and becoming pretty good. She was getting more adept at finding information but still expressed frustration at not getting proper support from her teachers.

As the end-of-year exams were approaching, the Minister announced that due to the pandemic, students in Grades 10 and 11 would take the exam at home on the tablet (Shawki 2020a). Laila's friend Moe was worried because he lost his tablet pen. During the last e-exam, he tried to write on the tablet with his finger, but that did not work. Laila told him to try using a vegetable, like a carrot or a pepper. This solved the problem.

Most of her friends were having a different kind of conversation. They saw the at-home exams as an open invitation to cheat. Many of them did not see the point in studying. Cheating groups were proliferating via WhatsApp and Telegram, but Laila did not want to take part in the

cheating frenzy.⁸ Instead, she learned about the new exam questions, took the practice tests, and took her exam at home alone as instructed.

The Minister initially saw the take home exams as representing a huge achievement. Over 1.2 million students in Grades 10 and 11 took the e-exams remotely. It soon came to light, however, that there was indeed mass cheating. Consequently, the Ministry decided that it would abandon the remote exams. In the meantime, with Grade 12 and the Thanaweya Amma looming, the Ministry continued to build the digital educational edifice and institutionalize blended learning.

5. Grade 12: Blended Learning and the Thanaweya Amma

The digital transformation of high school in ‘normal times’ may have taken years for public buy-in, if at all. During the pandemic however, distance and hybrid learning became the default mode of educational delivery for pre-tertiary education in not only Egypt but in countries around the world (Herrera 2022: 197). Egypt was especially well prepared with its digital infrastructure. By the start of the 2020/2021 academic year all students in high school had tablets. The Ministry sponsored several learning platforms and educational television channels. In a press conference to announce the details of the new academic year, Tarek Shawki remarked:

The secondary stage with 1.8 million students is fortunate... They are the luckiest because they have the largest amount of digital content and the educational channels. This year all the secondary students have tablets, all the school classes are equipped with internet, networks and servers... [They have] the Edmodo platform, e-platform, live broadcasting, and educational channels, e-box, e-lessons, Ask a Teacher, great resources. Since they are older and have more to study, we are providing them with many resources (Shawki 2020a).

The MOETE formally made blended learning the default mode in high school. Blended learning combines educational delivery models, most commonly face-to-face on-site learning with synchronous and

⁸ The Minister has spoken openly about cheating as a widespread phenomenon. See, for example, Shawki 2022.

asynchronous online or analog (in the case of television) learning.⁹ High school students were supposed to go to school two days per week, but only for 'non-core' activities like sports, extra-curricular activities, and homework. For the first time, Egyptian high schools would experiment with the flipped classroom or 'reverse education'. The flipped classroom concept is essentially when a student watches a video lecture (online or through television) and reads sources on that topic prior to coming to class. The student comes to school to do 'homework' with the active help of the teacher and perhaps peers. The method is supposed to lead to more personalized learning. In this scenario, the teacher's role is changed from 'presenter of content to learning coach' (Bergmann and Sams 2012: 27).¹⁰

In actuality, Laila did not see anything resembling a flipped classroom at her school. Her teachers used the class time in different ways. One teacher gave traditional lectures and drilled students who repeated what she said. Another teacher used the time to activate the classroom's smart board and stream videos from the Madrasitna YouTube channel. For the most part, teachers let students use the class period as free time. Laila remarked,

I do not think our teachers have been trained on how to teach us for the new [Thanaweya Amma] questions. They still act like the best way for us to prepare for exams is to memorize everything.

With tablets now in the hands of all high school students, the Ministry stopped printing textbooks. Instead, students were instructed to use their tablets to access digital copies of their books via the Knowledge Bank (Shawki 2020b). The digitization of books frustrated Laila and her friends. When Laila told her friend Moe that she was having trouble downloading the books, he shared screenshots he received from his school's IT specialist with detailed instructions about how to access the books. She was able to download them to her phone but felt she needed physical copies since she preferred to take notes on printed textbooks and did not know how to edit electronic documents or PDFs. Her phone

9 The blended learning approach started in the early 2000s mainly in higher education settings and with mixed success. See, for example, the work of Graham 2013 and Means et al. 2013.

10 The flipped classroom puts great demands on teachers and requires training. It is not suited to classes with high student numbers (Bergmann and Sams 2012: 6).

screen was too small anyway for studying. She thought about printing the textbooks, but that was far too costly.

As a solution, she tried with two classmates to get books from the previous year. They first debated about whether the previous year's books followed the same curriculum. They kept hearing about the 'old system', versus the current 'new system' and wanted to make sure the new system did not have a different curriculum. Since she followed the Minister's communications closely, Laila was pretty sure there was no difference in the curriculum, but only in the style of questions for the Thanaweya Amma (which was the case). Laila discovered that the older textbooks were being sold in the black market and found a place to buy them. She also bought external books. Students had been relying on external study books that provide summaries, study questions, and drills, for decades. The new editions were quick to adapt to the new system by for example, including multiple choice questions and having different levels of questions like those found in the new exam itself.¹¹

Something different for the class of 2021 was that the MOETE provided a variety of study resources. The study platform Hesas Masr supplied drills and study questions for the Thanaweya Amma exam. It received almost two million hits in a very short period prior to the exams. The study guide available on the Knowledge Bank received 1,400,000 views. Over 60,000 people subscribed to the Madrasitna educational channel on YouTube for secondary students. The Minister said, 'All these resources were accessed by students who learnt something from them. This is very important for us' (Shawki 2021).¹² These Ministry resources competed with a growing market of apps and digital resources.

Laila found the proliferation of digital resources overwhelming. They became a distraction. She did not explore the Ministry's resources but rather relied on the direction provided by her private tutors. For instance, one of them recommended the popular app Ashtar which she

11 Laila discovered that certain Ministry textbooks like the Chemistry one, were even better than the external books. Her main challenge was that textbooks were mostly written in essay form. The formatting in the external books with clear titles and bullet points, was easier to navigate. There were pros and cons for each book type, but she could only bring the official ministry book into the exam.

12 The Ministry's study platforms are available through the MOETE online portal <https://web.archive.org/web/20250710112729/https://moe.gov.eg/en>

downloaded and used regularly.¹³ She also watched the YouTube videos of teachers whose channels she followed.

As the year progressed, Laila's study patterns evolved. For the first few months in the fall term, she was uncomfortable studying with electronic PDF files and preferred physical books and in-person tutors. By the spring term, she had grown more confident with the resources and was letting go of private tutoring for some subjects. Her parents wanted her to stay with in-person tutoring, but she convinced them that since she could rewatch the videos on the lessons whenever she wanted, she did not miss anything. She said,

The world has now changed. The Thanaweya Amma is not like before.... We need to be flexible and adapt to the new situation online. But it is hard to convince my parents of this. They prefer the old way of private lessons. Maybe if they see that a few of my friends are doing the same, they will believe me and feel more comfortable. They will see I am not the only one.

She learned to create folders for each lesson, keeping her comments saved and organized. She became more comfortable locating materials and tutorials online, including troubleshooting advice for the tablet. She learned how to switch languages, how not to refresh the page during an exam, and other things that made for smoother use of the tablet. In the spring term Laila shared a voice note to update us on her new thinking about the digital resources:

I have news I want to share with you. Do you remember at the beginning of the pandemic you asked me if I liked to study online or not and I said 'No, I need to see and at least talk to the teacher'. And then you asked me later when I started taking some tutoring online and I told you I was getting used to it. I want to tell you that for the past month I have not left the house and have not seen a private teacher. I am doing everything online and on the platforms. I am very comfortable. I just wanted you

13 The Ashtar app is available on Google Play <https://play.google.com/store/apps/details?id=uk.devwork.pathfinder&hl=en&pli=1>. It is described in the App store as follows: 'Accredited by Cognia, one of the largest educational accreditation institutions in the world and with a growing family of over 300K students, parents, and teachers, Ashtar provides you with a personalized and interactive online learning experience for K-12 students. By being a curriculum-based platform, we enable our students to reach their full potential by paving their own way in their studies. Start your online learning journey now from anywhere at any time!'

to know that with experience I have changed my mind. It's normal for people to change.

In the leadup to the Thanaweya Amma exam, Leila and her classmates experienced an added layer of stress because of the inconsistent messaging by the Ministry. The Minister himself made multiple announcements, each time with different instructions about how the exam would be administered. For instance, first he said the exam would be taken through the tablet. He later announced the exam would be on paper. (This change was supposedly due to an order from the President's office.) Laila remarked, 'I did not trust what the Minister said until the day before the exam. On that day, I woke up and checked if there was anything new. Thank God there was nothing. So, I went with the last announcement about having paper exams and being able to bring in our textbooks'. Students were also warned that they would suffer serious consequences if they cheated on the exam. (These warnings apparently went unheeded for many). Laila expected to take her exams in a highly secured environment, but it was not as bad as she imagined. She said,

There were police at the school gate, and they checked our bags. In the exam hall, the rectors were screaming at us all the time. They were very tough but not as bad as people were saying. We thought there would be lots of cameras, but there weren't any. It was a normal exam hall.

Laila did not take engage in any cheating schemes, though she knew many people who did. Students worked with private tutors, peers, and parents on even more efficient ways to cheat using apps, electronic devices, electronic communication, and social media.

In 2020/2021 the pass rate for the Thanaweya Amma was 74% (Shawki 2021). When Laila got her results of 70%, she was initially depressed because this score was not high enough for her to join the faculty with physiotherapy. Instead, she was assigned to the faculty of agriculture. She considered re-taking her exams but, in the end, decided against it because that would require huge efforts and money. There were no guarantees she would get a higher grade. She thought, 'There is more to look forward to, and it's better to put this time and money into investing in the future'. She convinced herself that entering agriculture would be a good path for her. Her father held a party to celebrate her being the first person in the family to go to university.

6. Starting University

Leila is currently (in 2022) a student at the faculty of agriculture and specializes in biotechnology. She is enjoying the program so far. She attends some classes online and comfortably participates in blended learning. She also signed up for extracurricular remote courses in English and Microsoft training. She is proud of her ability to use a variety of online platforms with ease. Her technical skills have steadily improved. She is able to edit electronic documents, work with digital folders, search for and use different apps, and do research online. The tablet, which students were allowed to keep after leaving high school, has proven a valuable tool for university. She added a sim card to it and uses it as a kind of laptop because it has a ‘decent’ screen size. She downloaded WhatsApp and other applications that allow her to watch movies, do her assignments, and take different online courses. She currently has all her university material connected to the tablet. With hindsight, Laila feels that her high school years—despite the frustrations of being subject to many experiments, the uncertainty of the pandemic, anxiety about the new technologies, erratic messaging from the Ministry—prepared her for university and online learning. Looking back, she feels fortunate to have been a member of the historic high school class of 2021.

7. Learning From the Class of 2021: Key Takeaways

While many of Laila’s high school experiences are unique to her, they also provide insights into the wider environment. Her high school learning journey offers five key takeaways.

7.1 Exams and Grades Remain at the Core of the System

The reform started with the intention of ‘transforming’ learning by advancing more critical thinking and self-motivated learning. These goals were supposed to be achieved by providing various digital tools which students could access through the tablet, and by changing the nature of the questions which required critical analysis rather than memorization. In reality, the system remained fixated and almost wholly oriented towards the high stakes Thanaweya Amma exam. Students continued to

experience immense levels of pressure and stress throughout their high school years. While they were indeed motivated to find ways to learn on their own, this was more a result of school closures during a global pandemic than because of the availability of electronic platforms and resources. The erratic messaging from the Ministry further pushed them towards self-reliance and peer-to-peer support. As long as high school remains focused on the Thanaweya Amma exam, endemic problems relating to private lessons and cheating will invariably persist.

7.2 Private Lessons Adapt to New Technologies

The MOETE provided students different alternatives to private lessons through new platforms, digital resources, and video lessons. Some of these services saw a high volume of users, especially in the period leading up to the Thanaweya Amma. At the same time, the private lesson market adapted to the expanding digital infrastructure. Private tutors provided a range of new services including synchronous lessons online, sometimes behind a paywall, and sometimes for free. Students became more skilled at finding free video lessons and other resources. It remains to be seen if parents will embrace the digital platforms as valid spaces for their students to take private lessons, and if these will lead to high results on the Thanaweya Amma.

7.3 Cheating Adapts to New Technologies

The Ministry thought that digitizing aspects of assessment would minimize, and possibly even eliminate, cheating. Except for the Thanaweya Amma which was ultimately administered on paper, assessments were by and large digitized. The tablets were connected to electronic question banks and exams were graded through an automated system. Nevertheless, the culture and practice of cheating among high school students continued and seemed to flourish. The technology will not solve cheating. As long as a high-stakes exam continues to provide the single pathway to university entrance, many students and their families are likely to continue to use any means at their disposal to game the system, including through cheating.

7.4 A Reform Needs a Clear but Nimble Roadmap

In 2018, reforms to high school were rolled out with a high degree of trial and error and without a clear roadmap. The class entering Grade 10 were subject to constant experimentation, sudden changes, and inconsistent messaging. Any new reform will need to have room for some nimbleness. This point proved abundantly clear during the pandemic. However, without a higher degree of predictability, planning, and consistent messaging and communication, even the best-intentioned reforms can cause students and their families a high degree of pressure and place additional burdens on them.

7.5 Students Acquire Digital Competencies but Still Need Their Teachers

As students became more digitally literate—through peer groups, social media, YouTube tutorials, government and private platforms—they still talked about wishing their teachers could better support and guide them. More systematic research is needed to understand who benefitted from these technologies, which segments of the population were left behind, and what kinds of additional infrastructural and education interventions are needed to strengthen the teaching profession and ensure education upholds its social and civic purpose.

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25. The Rise, Fall, and Aftermath of Take-Home Research Projects

Linda Herrera and Heba Shama

Abstract

In March 2020, schools across Egypt closed due to the COVID-19 pandemic. The Ministry of Education and Technical Education (MOETE) cancelled the traditional end-of-year in-school exams in the transitional years of Grades 3-9 and replaced them with a take-home research project. The very idea of a project went against deeply engrained norms and practices around assessments. This chapter traces the rise, fall, and aftermath of the research projects. It draws on official Ministry communication and social media monitoring combined with in-depth interviews with teachers, parents, and students. Rather than judge this experiment in assessments in simple terms of 'success' or 'failure', the projects allow us to understand the agility of the predatory education marketplace, the prevalence of a 'people versus the state' ethos, how cultures of learning change from the top down and bottom up, and ways that behaviors that begin online spread into mainstream culture and alter education practices.

Keywords

cheating, distance learning, projects, digital inequality, social solidarity, digital resources

1. An Experiment in Assessments

The Egyptian educational system has historically been dependent on traditional teach-to-the-test assessments that rely heavily on memorization. This system has shaped students' educational socialization and spurred a massive market for tutoring and other educational services focused on test preparation. In 2020, following the nationwide school closures due to the COVID-19 pandemic, the usual end-of-year tests were disrupted. The Minister of Education and Technical Education Dr. Tarek Shawki (2017-2022) substituted exams with research projects for the 'transitional years', meaning Grades 3-9. This alternative assessment had never before been tried. As an idea, the research project idea aligned with core goals of the Education 2.0 reforms which advocated multidisciplinary and exploratory learning for higher order thinking skills, collaboration, and student engagement with digital tools and resources. But what happens when end-of year-assessments suddenly shift from being based on an exam in a highly regulated environment, to an open book, month-long, take-home research project? What does this experiment reveal about how cultures of learning shift or change, whether from the top down or bottom up?

Recognizing the unique opportunity to track this novel assessment experiment, we set out to document the arc of the projects from conception, to students completing and delivering projects, to near universal pass rates, to the fallout and its aftermath.¹ In order to understand these different phases, we undertook social media monitoring complemented by interviews and analysis of official Ministry announcements. We especially observed the highly active Facebook pages of the Ministry of Education and Technical Education (MOETE) and the Minister

1 The research for this chapter was collected for the Education 2.0 Research and Documentation Project, under the direction of Linda Herrera. Many thanks to members of project team who contributed to the research. Heba Shama (co-author of this chapter), Hany Zayed, Nairy AbdElShafy, and Dina Mokbel, tracked social media, interviewed teachers and students, and met for regular debriefing sessions. For information on how the project designed its remote research during the COVID-19 pandemic see Herrera and Shama 2020.

Tarek Shawki, teacher groups, parent groups, and student groups.² These were all spaces of lively debate and information, and sometimes misinformation, sharing in real time. Cognizant that not everyone is online, and that among people who are online only a minority tend to be vocal, we also undertook longitudinal remote interviews with people connected to public schools at the primary and middle school levels. We conducted a series of interviews over four months with five teachers, five students, three mothers, one school technology specialist, and one school principal. We used purposeful sampling to ensure we included participants from different governorates and included people without Internet access.

2. Arc of the Research Projects

On 14 March 2020, the Education Minister Dr. Tarek Shawki confirmed that out of 109 confirmed COVID-19 cases in the country, seven of them were schoolchildren (Youn7 2020a). The same day, the Egyptian Prime Minister Mostafa Madbouly announced a presidential decree to close schools and universities starting 15 March.³ The Ministry had to quickly decide how to handle the remainder of the semester and what to do about end-of-year assessments. It could have doubled the grade of the first semester exams to arrive at a final grade for the year. This would have meant simply ending the academic year early. The Minister rejected this idea, insisting that students needed to continue learning. He came up with the idea of the research projects so that the children would learn how to access the Egyptian Knowledge Bank

2 We monitored the teacher groups, Egyptian Teachers Union *Etihad mu'alimi misr* with more than 500,000 group members, and Diary of the Egyptian teacher *yawmiaat almu'alim almisri* with more than 250,000 group members, the parent groups 'Egyptian Mothers Union to Advance Education' (*Etihad omahat misr lil-nuhud bil-ta'lim*) with more than 105,000 group members, and 'The Egyptian Parents Union—The Interest of Our Children is Above All' (*Etihad 'awlia' 'umur misr - maslahat 'awladuna fawq aljamie'*) with roughly 50,000 group members. Numbers of group members are from 2020.

3 Prime Minister Moustafa Madbouly initially announced that schools and universities would be suspended for a period of two weeks starting from 15 March 2020, a 'temporary and precautionary measure to prevent the spread of the COVID-19 virus'. However, as the virus continued to spread, schools and universities remained closed for the remainder of the academic year.

(EKB), search for online resources, and present them. Though he initially faced opposition from within the Ministry, they quickly came on board to ensure that everything was in place for the projects. One of his advisors at the time recounts,

It was Dr. Tarek who came up with this idea [for the research projects]. Everyone was telling him to just double the first semester exams and skip the end of year exam. [...] Lots of people in the room were opposing it. But the idea was to help the kids learn through the EKB portal, to figure out the system. Everyone had to embrace the change and to act quickly (see Chapter 8 in this volume).

Deena Boraie, Senior Advisor for Assessment, Examinations, and Curriculum, asserted that the projects were supposed to promote deep learning rather than memorization and were consistent with what they were doing with Education 2.0 overall. She helped the Center for Curriculum and Instructional Materials Development (CCIMD) design a very simple rubric to make it easy for teachers to score the projects.

In a much-anticipated television appearance on 19 March 2020 to inform the public how the Ministry would deal with the school shutdowns, the Minister announced that students in the transitional years would not sit for their usual in-person end-of-year exams. Instead, they would produce ‘research projects’ in key subjects over the course of two months. In only four days, his team had launched ‘study.ekb.eg’, an e-learning platform for students in KG to Grade 12 where all study materials would be available and incorporated in the Learning Management System (LMS) Edmodo housed in the EKB (Education 2.0 Research and Documentation Project 2020a and 2020b). With the use of an electronic white board, the Minister demonstrated how to navigate these platforms (see Fig. 25.1).⁴

4 Edmodo allowed teachers to remotely share content, distribute quizzes and assignments, and manage communication with students, colleagues, and parents. See Chapter 20 in this volume about how Edmodo eventually went out of business, and the still unanswered questions about what happened to all the school, student, parent, and teacher data.

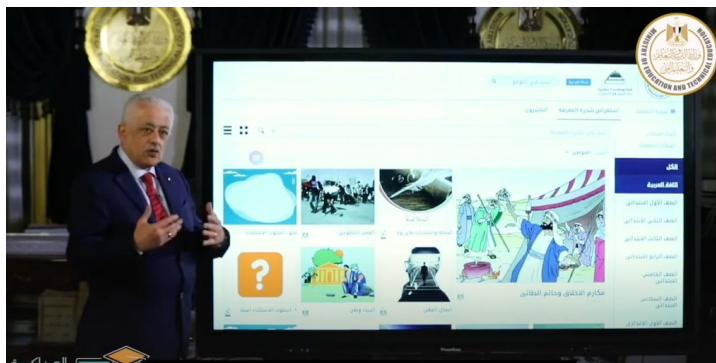


Fig. 25.1 Tarek Shawki demonstrates how to use the digital platforms for educational purposes. Still from 'Ministry of Education Egypt Response to COVID-19: Digital Platforms (March 19, 2020) (1/2)', Education 2.0, YouTube, <https://www.youtube.com/watch?v=rbVwroiTrdI&t=727s>

Shawki had been wanting to change the existing model of assessments away from memorization and testing but consistently encountered roadblocks and strong resistance.⁵ The pandemic provided an opportunity. In another break from norms, students were given the choice of doing the research project individually or in a group, with a maximum of five students per group. Shawki explained that doing the projects in groups would help students 'learn skills such as teamwork, self-learning, team spirit, and how to search and cite resources' (TeN TV 2020). He explained,

We are learning new things, and maybe even benefiting from this crisis which led us to do [research projects] [...] We decided at the ministry that after this crisis is over, we are going to replace the traditional exams in all regular school years with research projects, starting from September 2020. So, from now on, there will be no traditional exams in transitional school years, and no more exam committees. Instead, you will have one or more research projects. I think this method will be more fun. It allows students to develop new skills and benefit from the advantages

5 See the video from 6 May 2018, 'Argument of Parliament's Education Committee with Tarek Shawki about Teacher Training', YouTube, <https://www.youtube.com/watch?v=Ql3umwvoLd4>

of the new system. We believe this is much better than the traditional assessment process (TeN TV 2020).

On the day the Ministry disseminated detailed project guidelines, the word 'research' was trending in google searches in Egypt.

The Minister expected students and their parents to be delighted with this alternative to the dreaded traditional exams, but this was not the case. A member of the Minister's team recalled that people were initially saying that projects were for students in the university and not suitable for children from eight years old. But when they saw the age-appropriate instructions, 'they could not really complain'.⁶ The rubric for each grade included instructions about how to include the title, introduction, summary, the findings, conclusion, list of references, the choice of topics, and how to find information using schoolbooks and the online learning platforms. For example, in Grade 3, students could choose between four topics; tourism, energy, health, and water.

Almost immediately, a flurry of groups on social media sprouted. Parents, students, and teachers initiated and joined groups to ask questions, answer questions, or identify private tutors who could help them do the projects. Students and teachers made 'how-to' YouTube videos that explained the projects. One video that attracted a lot of attention was by a fifth-grade girl named Ola. She explained with remarkable clarity in a cute and precocious way how to do the projects and use the resources of the Knowledge Bank. The Minister posted her video on his Facebook page with the comment:

One day after the research projects were announced, I saw this video of an Egyptian girl in the fifth grade in a public school in Kafr Saad in the Damietta Governorate. Look at the intelligence of this child and her deep understanding of the subject. Egypt is doing just fine, and our children are fine (Shawki 2020b).

That video subsequently got picked up by the Egyptian television Channel 1 and was aired as an example of the resourcefulness of Egyptian students (see Fig. 25.2).

6 From an interview with Ingy Mashour by Linda Herrera on 11 May 2020, who at that time was the Minister's Executive Assistant.



Fig. 25.2 Still of a fifth grader Ola Abdel Hamid explaining in a video posted on Facebook on how to do the projects, 10 April 2020, <https://www.facebook.com/tshawki/videos/10223128119816036>

All students were supposed to upload their completed projects to Edmodo by 15 May. By that time, 11.5 million students, 1.16 million teachers, and 750,000 parents had subscribed to the platform (Shawki in World Bank 2020). For students unable to access the platform, they had a way to submit their work offline in their schools. The MOETE received and graded nearly 19 million projects. Initially, the Ministry declared the experiment a great success. In a joint conference in September 2020 between the Ministry of Education and the Ministry of Health, the Minister stated,

The Ministry of Education and Technical Education has succeeded in an unprecedented achievement in Egyptian education. We evaluated nearly 19 million research projects for Grades 3-9 and held electronic exams for 1.2 million students at home for Grades 10 and 11. This means we are closing the academic year 2019/2020 with proper education. Students passed to the next academic year only after being tested on their accumulation of knowledge, understanding, and comprehension of the current year's curriculum (General Authority for Information, Government of Egypt 2020).

Not long after the government announced the great success of the projects a more somber reality set in. It came to light that a high proportion of students who completed projects (Grades 3-9), or took

at-home electronic exams on their tablets (Grades 10-11), resorted to some form of cheating. This revelation considerably changed the narrative of take-home projects and take-home exams.

3. The Fallout

After the dust of the projects had settled and the new academic year 2020-2021 was underway, it emerged that a robust market sprung up among all segments of Egyptian society for the buying and selling of research projects. Education ‘entrepreneurs’, had sold projects for sums ranging mainly between LE 50-LE 300, but parents in upscale areas were paying upwards, and sometimes significantly upwards, of LE 1000.⁷ The Minister railed, ‘Research was sold on the sidewalks!’ (al-Youm7 2021) (in 2020, the exchange rate was roughly LE 16 to USD 1).

By December of 2020, the Minister vowed to permanently eliminate research projects as a form of assessment. He declared, ‘There will be no more research projects instead of exams... There will be no student in Egypt who will pass the year without an exam no matter what happens’ (Youm7 2020b). ‘We have cancelled the research system’ (al-Watan 2020).

Deena Boraie, who worked on the project rubric, said,

It turned out to be a total disaster. You can imagine what happened. Projects started becoming a lucrative source of business. We started hearing about projects for sale and the prices being charged for them. Parents were buying projects for their kids. Those parents who could not afford the prices started screaming that it was unfair. [...] I mean, projects were going for all kinds of prices, and of course we saw the usual divide between the rich and the poor. The costs ranged enormously across the country [...] But the fact remains that a large portion of projects were not done by the students, but by teachers, or by clever entrepreneurs who made quite a lot of money out of this. Of course, this was definitely not our intention. It completely missed the purpose of deep learning and developing young people’s skills. [...] Of course, we will never repeat it again (see Chapter 6 in this volume).

7 This information is based on Education 2.0 Research and Documentation Project documentation of posts and advertisements collected on WhatsApp groups, Facebook, Telegram, and through interviews.

The Minister expressed especial indignation towards parents, who he accused of not caring about the learning process but only about their child’s grade, and of undermining principles of equal opportunity and meritocracy (al-Watan 2020). He stood by the method of the projects in principle, and complemented those diligent students who benefitted from them, but bemoaned that too many people exploited the situation (al-Hekaya 2020). At the same time, the Ministry had to also address mass cheating on the remote exams for high school students.⁸

The arc of the projects was fairly short (see Fig. 25.3). From the time they were announced in March 2020, to revelations about widespread cheating in December of 2020, the Minister did a complete about turn and vowed never to repeat the research projects again. While one might conclude that this was a ‘failed’ experiment, that would be shortsighted. As a social educational experiment, there is a lot more to unpack about the projects from the students, teachers, and parents who participated in them.

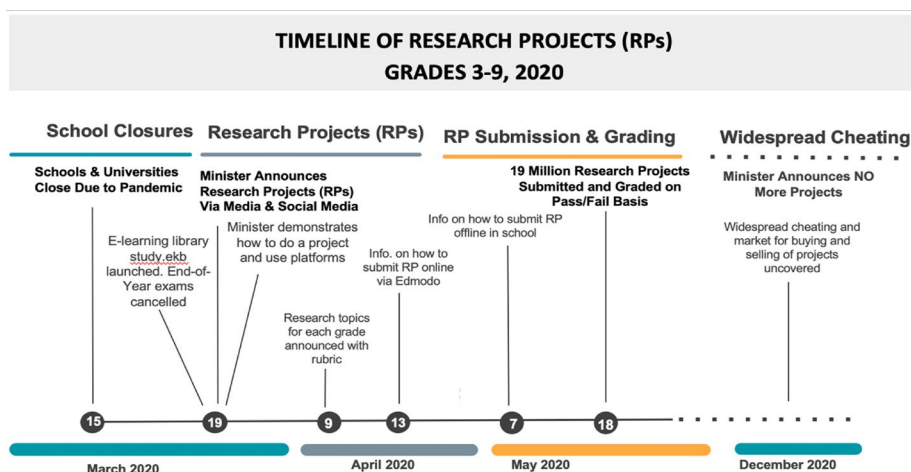


Fig. 25.3 Timeline of research projects for Grades 3-9, 2020-2021. Graph by Herrera and Shama.

⁸ The Minister spoke openly about cheating during the in-school high school exams where ‘students smuggled in phones and used computer applications. We are speaking about a [wide] phenomenon [of cheating]’ (Shawki 2022).

4. Accommodating the Digital and Non-Digital

When schools closed, families across Egypt scrambled to figure out how to access the Ministry's online platforms to ensure their children could finish out the year. Nothing seemed to be as strong a motivator to get parents onto these platforms, than the pull of the end of year grades. In 2020 at the time of the projects, roughly 54% of the population were online. During the first year of the pandemic, the number of Internet users jumped 8.1% which led to a 57% Internet penetration rate by January 2021. Mobile connection was far more widespread, with almost 93% of the population having a mobile connection (Datareportal 2021). Still, large swathes of the population were offline, particularly in rural and remote areas. In efforts to overcome uneven Internet access and address the digital divide, the Ministry disseminated information about the projects online, via television and radio broadcasts, and directly through schools. It also invested heavily in educational television channels, Madrasitna 1, 2, and 3, to reach households without Internet. Still, families with no or limited Internet access felt they were at a disadvantage and tried to find workarounds.

One mother from a village in the al-Sharqia governorate with a daughter in Grade 6 was worried about whether her daughter would be able to do the projects. To get online, her daughter had to borrow a cell phone from either her brother or father, but she could not use it for a long stretch of time. As a solution, she joined a group of five classmates to consult with a teacher. He charged LE 50 per student, which the mother called a 'symbolic fee' compared to what other teachers in the village were charging. He instructed the group on how to do the projects in detail. Even though they had the option of buying a ready-made project, they were determined to do it themselves, and did so.

In a different village in al-Sharqia, a stay-at-home mother had two daughters, one in primary and the other in middle school. The family had a television but no Internet. Her neighbors did not have children in the same grades, so the mother contacted her extended family to get more information about how to do the projects. Since they needed to access online resources to finish the year, she felt compelled to purchase a new smart phone. This unexpected cost presented a considerable financial burden on the household, especially during the pandemic. There were

also additional costs for data. Even with all this investment, it was not always possible for her daughters to access the Internet. She explained,

Online educational videos are good, but only when the Internet is available. Here in our village, the Internet is already weak. And even when my daughter went to her friend's place who has Internet, she needed a card that costs LE 50. They still couldn't access what they needed because it was slow. I mean, this (online) system will be fine when all the technology is available.

In a town in South Sinai, a working mother who had Internet but was not on social media, initially reached out to her co-workers for help. She tried to get information on the projects, but they were all as lost as her. She explained:

There are ten other parents at my work who have kids in Grade 9 like me. Every one of them feels lost. We are waiting and hoping that the Minister of Education or the Prime Minister will explain to us in a better way about what they are doing.

In her case, television became the more reliable medium for information and updates. She watched evening call-in talk shows (with hosts Ahmed Mousa, Basma Qotb, and Amr Adeeb) where the Minister himself made appearances. These programs also provided her with insights on how other parents—the ones who were calling in—were dealing with distance learning.

In a more remote location in South Sinai with almost no reliable Internet access, local communities found in-person ways to support each other. In one community, families from the school reached out to the Imam of the local mosque. A male Arabic teacher recalled how in their conservative community, the mosque was a more suitable venue than online groups to communicate with the children. He explained:

Most of my students are Bedouins and they live in remote desert valleys. They don't have access to the Internet. Some parents don't even allow girls to have a cell phone. The community has its own traditions. Some things are changing of course, but not to the extent where I can communicate directly with the students online. I can't even record a video for them to watch.

For these families and teachers who lived and worked outside large towns and urban areas, they felt at a clear disadvantage. However, since

the projects were graded on a pass/fail basis, with near universal pass rates, the projects flattened differences between students.

5. Solidarity on Social Media

During the first year of the pandemic (2020 and 2021), the rate of social media users in Egypt grew by seven million users, a leap of 17% (Datareportal 2021). With over forty million Egyptians on social media, it provided a means to gauge public concerns, sentiments, and debates. While one cannot use social media as a substitute for a statistically valid public opinion survey, it can provide insights into the pulse of the society. Through monitoring a select number of social media groups, we observed how quickly a new vocabulary entered the online public discourse and became normalized. In the first three months of school closures, a new terminology was spreading throughout posts in education-oriented social media groups with words like 'project template' (*al-qawalib* or *namadhij*), 'Knowledge Bank' (*bank al-maarifa*), 'platform' (*minasa*), and 'upload' (*rafae*). As noted above, the term 'research' (*balath*) was trending in Google searches in Egypt. Intentional or not, the projects were pushing the society into participating in and accepting a changing world of online learning, and people were helping each other through it.

Mothers emerged as a highly vocal and proactive group on social media on educational issues. In one of the popular mothers' Facebook groups, 'Egyptian Mothers' Union to Advance Education', they shared information on the projects and the online system. Some of them explicitly expressed how they preferred the projects over end-of-year exams because they, the parents, could do the work themselves. The exams on the other hand, required costly private tutors and still, they could not be sure about how their kids would perform. Other mothers were more concerned about how to keep their kids motivated. One mother complained, 'My son is in sixth grade. At the beginning he used to complete the worksheets. But after the research projects were announced he started saying that he won't do anything anymore'.

People expressed mixed opinions about online and distance learning, but sentiments were largely negative. Some were talking about the limitations of online learning and the physical need for a teacher in the education process, while others talked about the problems with

over-reliance on the Internet and the difficulty of getting their students off screens. A post by one mother named Youmna generated a lot of engagement. She wrote,

Unfortunately, to be brutally honest, online education has proven to be a failure. Why? 1) Students are not concentrating. There are no proper channels of communication to deliver the information. 2) The Internet speed is weak and slow, which interrupts receiving of information. This causes so much distraction. 3) Some websites that deliver lessons for high schoolers delete the videos after a short period. This prevents students from continuous learning. 4) There are websites that are accessible only through a fee, which makes it unequal. 5) Students watch the videos as if they are watching a movie at the cinema, without any sense of concentration.

Other mothers weighed in on her post with comments:

Mother 1: Learning through the Internet is such a failed experiment. Our children don't know how to learn from the videos. They think they are on vacation.

Mother 2: We have discovered the true reality of our education system... the system is ruined. There is no development, it's all a fiction... the kids will fail and will not learn anything.

Mother 3: It's true that online education is not for all students. There is no alternative to the school and the teacher, but I do respect all the effort being put for online education. Despite being in a crisis, we were able to offer online lessons.

On 9 April, the day the Ministry issued the project rubric, the mothers' group shifted from debating the downsides and merits of online schooling to going into full action mode by sharing educational resources and supporting each other on research projects. Male and female teachers on the page disseminated information, answered questions about submission dates and deadlines, clarified what to include in the introduction, word counts, and how to find sources. Page members asked specific technical questions, like how to do the research on the phone, or how to convert a Word file to a PDF. For instance, one mother asked, 'How can I make a rectangle shape on word from my phone?' Another asked, 'Where can I find sources to help me do the research project [...] I used the schoolbook, but I need resources other than EKB... Thanks'. Their questions were always met with responses in the comments section. Some members of a page shared template models and how-to videos from sources they

had found, including by the Minister himself posted on the MOETE's Facebook pages, as well as from 'education influencers' who posted on different YouTube channels and platforms.

The collective experience of everyone being involved in distance learning sparked public discussions about the role and value of schools and teachers. Some mothers expressed being more comfortable without schools and exams since they could more directly take control of their children's education. However, the majority of them expressed missing and appreciating schools. A series of exchanges on a mothers' group reflect these positions:

Emam: There is no education without schools... anyone who says otherwise is delusional. If that was the case, advanced countries would have closed their schools and universities and continued their education remotely... Technology is an aiding tool, not an alternative.

Madam Medhat: The student and the teacher are the two faces of the same coin, and the currency is the school.

Hend: Indeed, the school made a big difference.

Dalia: Hahaha, it is indeed exhausting to keep them at home. Did you figure out how to occupy their time?

Om Loka: Unfortunately, the confinement has made them reject any alternative to the phone and the Internet. We spend little time playing together because most of the time they are on their phones.

Amany: During this stay-at-home period, we learned the importance of schools. They carry the burden of taking care of the kids in the morning. It's also much better for a mother to go to work, take a break from the house and the kids, and then come back, instead of being a mother 24 hours a day. We also learned that staying at home causes so many fights.

Om Ojjo Wa Loka: Kids have no alternative but the school.

6. Listening to Teachers

Teachers found themselves in a difficult position. They seemed unclear about their role with the shift to distance learning. Many teachers on social media expressed fears that the proliferating educational platforms and services could undermine them and further erode

students' relationship with their schools. Schools had already long been suffering from low attendance rates. As reported in Oxford Business Group (2020), the Government of Egypt reported that 'only 37% of students generally attend school for a full seven hours per day, while the remaining 63% attend morning or evening shifts which last four and a half hours'. One female science teacher from a middle school in the al-Gharbia governorate said in an interview,

Edmodo is a nice idea, not bad. But when teachers need to communicate with students through websites, this will affect the student's connection to schools. There are already many students who just show up for their attendance grade and for the exams. Unless the Minister comes up with another system next year and forces students to go to school during certain days, this connection will be lost. I am sure he has some system in mind.

Teachers active on the Facebook group, Egyptian Teachers Union (*Etiḥad mu'alimi misr*) engaged in lively exchanges about the projects. They questioned the value of a project and wondered if children did them on their own.

Teacher 1: Parents are the ones who did the research projects. And the ones who couldn't do it themselves went to the cybers (Internet cafes) and hired someone to do it for them. Research projects are a lie and a way to exhaust parents. It would have been better to avoid all this and directly promote students to the next academic stage. Faking the gains with something that did not happen is the ultimate mistake here.

Teacher 2: If you were involved in correcting the research projects, you would know that they had no benefit. And if you talked to any student, you would know they did not do the projects themselves.

A female science teacher acknowledged that projects were okay as an emergency measure during the pandemic, but the Ministry should return to traditional exams after the crisis (which they did). She explained,

I understand that research projects were applied due to COVID-19 conditions, and I think there were some benefits for the students. But we will not be able to assess the differences between students through projects. Next year, there must be an exam. Students at this stage should develop their skills and be tested on their ability to read well and write well.

In the end, the project experiment had little bearing on student pass rates for the year as 98.5% of primary school students passed the year (compared to 97.4% for the 2018-2019 academic year) and 98.6% of middle school passed (compared to 96% for the 2018-2019 academic year) (CAPMAS 2021).

7. A Failed Experiment? Not Quite

One might be inclined to call the research projects a ‘failed’ experiment because of the fallout resulting from mass cheating and profiteering. From the point of view of the moral economy, the projects put a spotlight on a predatory education marketplace. Agile education entrepreneurs and only too willing parent and student customers, participate in a system that normalizes cheating and inhibits academic learning. Yet, even with the cheating, a lot of other learning, problem-solving, and forms of social solidarity were taking place.

Over thirteen million students, parents, and teachers created accounts and uploaded the projects on the learning management system, evidence of a steep technological learning curve. Words like ‘project template’, ‘Knowledge Bank’, ‘research’, ‘platform’, and ‘upload’, became commonplace, testifying to the speed at which new vocabularies and behaviors enter mainstream culture. Students made how-to videos to share with fellow students, while parents and teachers formed mutual support groups on social media where they helped complete strangers from different parts of the country. Even as digital inequality remains a pressing issue, people offline turned to neighbors, family, colleagues, and school or religious communities for information and support at the local level.

The research projects represent an historic milestone in educational assessment in Egypt. Unwitting or not, they generated different forms of learning and triggered active processes of collective problem solving. They offer a window into how behavioral and social change occur when something new, something unexpected, gets injected into the education system. This experiment also points to the possibility of transcending the teach-to-the-test assessment system that has been the cause of so much disdain from many circles. But the change is not likely to come through directives from the top down only, but through a process of

exchange and understanding with the drivers of the system, the teachers, families, and students, with all their resourcefulness and forms of social solidarity, from the bottom up.

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26. ‘Survival of the Fittest’: A High School Student’s Perspective on Learning, Ethics, and Why Students Cheat

Linda Herrera

Abstract

This chapter profiles ‘Gamal’, a member of the historic class of 2021. He belongs to the first cohort of students who began high school under an ambitious reform agenda that included the digital transformation of many aspects of learning and assessment, combined with the disruptions of the COVID-19 pandemic. Gamal reflects on the unprecedented if somewhat chaotic first years of the national reform. He explains how the figure of the Minister Tareq Shawki, an unconventional and passionate official who always touted his love for science, had a profound influence on him. He recalls the grueling year of isolation during the pandemic, and the highly competitive environment where a ‘survival of the fittest’ environment prevails. At the same time, he explains how students engage in acts of social solidarity through sharing materials and techniques for cheating on assignments and exams in a system they view as arbitrary, degrading, and unfair.

Keywords

COVID-19, cheating, competition, education reform, electronic exams, ethics, science, Thanaweya Amma, tablets

1. Introduction

In 2023, ‘Gamal’, an undergraduate Computer Science student in one of Egypt’s private universities, stumbled upon the YouTube channel of the Education 2.0 Documentation Project that I manage.¹ Since the time he was a freshman in high school, he had been closely following news of the Minister of Education and Technical Education Tarek Shawki (2017-2022) and was interested to discover that someone had been documenting the Education 2.0 reforms that so deeply informed his high school years. He reached out to me through social media with the message (excerpted):

I was a student in the class of Thanaweya Amma 2018, the first class that went through the new system Education 2.0. I am now in my third year of university. During school, we were split into two groups about the Minister. There were ‘pro-Tarek’ and ‘anti-Tarek’ camps. Both groups would always get into arguments about whether his new policies were good or not. What I always said to my friends was that Dr. Tarek gave us something more important than a new education system. He gave us a role model in perseverance and in passion for science. He set up high educational standards. I am now a scientist only because of his inspirational effect on us students.

Never wanting to miss an opportunity to explore the student perspective, I replied by thanking him and asking if I could interview him, and he agreed. I was in Egypt at the time, and we arranged a meeting time and place.² I did not know what to expect or even if I would use anything from that interview, but thought it could not hurt to hear him out. What I encountered was a highly thoughtful young man of twenty-one years at the time, with a great deal of perception and self-reflection; someone who thinks deeply about learning, ethics, and the system of education that has shaped him and everyone who

1 The YouTube channel, established in 2020, features a series of Oral History highlight videos with key figures involved in Egypt’s Education 2.0 reform, and edited excerpts of press conferences and media appearances by the Minister of Education and Technical Education, Dr. Tarek Shawki (2017-2022), among others, <https://www.youtube.com/@education2-Egypt/videos>.

2 The initial interview of two hours took place on 9 September 2023 in Cairo, with two follow-up discussions in 2024.

passes through it in complicated ways. He had been paying close attention to not only Dr. Tarek's attempts to change and reform the system, but also the reasons for some of his 'failures'.

Our three talks over the coming year, reminded me how valuable and necessary it is to understand and consider student perspectives. We agreed from the start on his anonymity so that he could speak freely. 'Gamal' is a pseudonym, and I have removed any identifiable features. For context, Gamal attended a boys' private high school founded in the early part of the twentieth century with instruction in English and Arabic. The school caters to the professional middle and upper middle classes. (For the perspective of a female student from a public high school from a more modest background, see Chapter 24 in this volume). The interviews were conducted in English and edited for clarity and flow.

2. A New Kind of Minister

LH You started high school in 2018, an historic year when tablets were distributed to all students entering Grade 10 for the first time. The Ministry started a process of digitizing things like exams and learning resources. What did you think about these initiatives at the time?

G In 2018 when I started high school, all the media was talking about Dr. Tarek and the tablets. This made us feel special. Everyone in my class was just buzzing about this. We also heard that this new Minister was supposedly going to bring different kinds of technology into education and that everyone needed the tablet to have equal access to the resources. This is the equal opportunity principle. Whether this change was positive or negative we did not know, but it was a shift, the first change in many years.

At first, a lot of people saw this as a joke and did not take it seriously. When we asked our teachers, they told us that this man was just ranting about some unrealistic dream. But then I started looking into it. I searched YouTube for Dr. Tarek Shawki. I used to do this kind of research a lot. The first thing that came up was his TedTalk in Cairo from 2015 (Shawki 2015). Everyone got to know him through that video. In another video of a big public event with the President, he was talking

about bringing passion back to learning. He was saying that life is not about getting a degree and hanging it on the wall (Shawki 2016a and 2016b). That's the same event when the President asked him to be the Minister of Education. You do not usually see people talking like that in the government. Dr. Tarek seemed different. It was inspiring to see a man his age who was still excited about science and learning. I thought okay, this Minister is genuine. His motivation is genuine. He has high standards in science.

After he became the Minister, the media was doing constant interviews with him. He always said that if you wanted to know what they were doing with the new education system, you should listen to the Ministry directly. By that, he meant people should listen to him, the Minister. I thought, 'Okay, I'll hear it from you'. Every night I would go on YouTube and watch the videos with him from that day. He was like a figure. He was someone you could look up to and say, 'Man, I want to be like that'. I was sixteen in 2018, and I had all the excitement of a little kid. I felt I had a chance to be exceptional and to stand out in this new system.

LH Did your classmates share your enthusiasm for the new Minister?

G There were two groups at my school, one 'pro-Tarek' and the other 'anti-Tarek'. The anti-Tarek group was in the majority, and they were more aggressive in their opinions. They thought that by applying this new system, Dr. Tarek might ruin their futures. They thought the man was delusional. Our teachers were also saying that he was not for real. All my instructors gave me a hard time just because I supported the man, because I used to stand up for him. I told them they should watch his talks and hear what he had to say. I told them they were spreading misinformation. A lot of people, especially the teachers, thought I was mad for supporting the new system. They said this Minister wasn't there to help us, but to help the government. They thought the government wanted fewer people to enter university and he was there to make the Thanaweya Amma exam harder. This was the kind of speculation going on about what motivated these changes.

3. Tablets

LH How did you and your classmates react when the tablets arrived at your school?

G Even though we started the year in September (2018), the tablets didn't arrive until November for public schools, and later for private schools like mine. This was the first thing that failed in the new system. Dr. Tarek made it clear that the change was not in the tablets or the technology on their own, but in the new method of evaluation and the new exam questions. We were supposed to take electronic exams in the fall but instead, the first semester exams were on paper. The electronic exams did not start until spring of 2019. So, if you are about to launch a new product and the first thing that happens is a failure, everyone who said that you were going to fail thinks they were right.

But when the tablets finally arrived, we were excited. This was an exciting piece of tech that we took from the government for free. It was like a toy. It was fun. Our teachers did not interact very well with the tablets at first, which was normal. It was going to take time. Some students used to play pranks on the teachers. For instance, when the teacher was explaining something, some students would use the tablet to play music. We also learned to set up movies on the tablet (which required hacking it). This happened after the controversial decision to not take student attendance in high school.

Most of us took private lessons anyways and did not go to school. Attending school was redundant. School became a place either for the ones who did not like going to private lessons or for students, like my friends and me, who wanted to meet each other. We came to school to just hang out. My group of friends would all gather in the last bench in the class, put in our earphones, and watch movies. The teacher would be doing whatever and we would just be having a watch party. This was us 'hanging out'. If the instructor wasn't strict, he wouldn't say anything. So, yeah, that was cool. It was fun back then.

LH What are some of the movies that you watched?

G We watched Spider Man and all the Marvel movies, the Avengers, and some Arabic movies, stuff like that. Everyone had their tablet in front of them with a movie on it. One guy might be watching one movie, while another guy was watching a different one. It wasn't always a watch party where we watched the same thing.

LH Dr. Tarek talked about how he wanted the tablets to be used by high school students as a tool to access the EKB which was installed on the table, and for the electronic exams. Did you use the EKB app?

G I used the EKB mainly in the third year (Grade 12). All of us did this. We explored it in the first two years, but not in an intensive way. Some classmates did not care about it. For us it was a cool platform with a learning management system which they brought when we were in Grade 11 (in 2019/2020 during the pandemic). At first, I thought it was fun. It taught us how to search and how to depend on ourselves and all of that. It helped me when I got to the university.

LH As a third-year university student now, do you use the EKB?

G No, not really. I used the EKB in a few English courses in my university, but my domain is more YouTube than the EKB. But the EKB does give me access to some scientific papers that I would not otherwise be allowed to view unless I paid money. Even though I use a different digital library provided by my university, a lot of my friends studying languages, management science, and people doing research in science domains, use the EKB on a regular basis.

LH What did you do with the tablet after you graduated?

G It is just sitting there at home. I do not do anything much with it. I used it for a while like a Kindle, to download the PDFs of books, stuff like that. But since we have a Kindle now, I just read on the Kindle instead. Some of my classmates sold it and got some money for it. A lot of my friends and I have our own laptops, so we do not need it. But I think students, like ones in Upper Egypt as Dr. Tarek talked about, benefitted much more from the tablet since it helped them access various resources for the first time.

4. A Culture of Cheating?

LH During your first semester of high school, the end-of-term exam was leaked. How did the Minister deal with this crisis?

G It's true that at the end of the fall of 2018 before the tablets arrived, the exam got leaked. The day before the exam, people sent it to each other on WhatsApp and all sorts of social media. We took it as a joke and a lot of people cheated. And what did Dr. Tarek do? He released a public video on Facebook (Shawki 2019) and said, 'We know the exam got leaked. We are not going to do anything about it. But we know'. Usually, a leaked exam is a big deal, but he was saying, 'If you really want to cheat, go ahead, cheat. But what will you do in Grade 12 when things get real? And why are you depriving yourself of learning?' For us, this was like someone playing with us. It was the first time we saw something like this coming from the government.

LH Dr. Tarek said early on that the tablet allowed the Ministry to administer exams without the 'touch of a human hand'. His intention was to curb cheating through technological means. Do you think he succeeded in this?

G There was so much cheating using the tablets. Dr. Tarek had his ideas and his vision, and that was something virtuous. But the new exams should have waited until the time was right and the tools were set. The first exams on the tablet (2019) were a mess. They were a physical and technical mess.

For the first time, the Ministry was using the 'open book' concept. The rule said you could come to the exam with the official textbooks but no other books. We could bring these books into the exam hall. The thing was, we used a lot of books for the same course. For example, we had external books and private instructors' books. Why were we allowed to only bring the Ministry's textbook? We did not agree with this rule. A lot of students brought in external books anyway. What happened was the Ministry blocked everything on the tablet, but we could still access and download files through the Chrome browser. I am talking now about the first semester of Grade 11 (2019). We found a way to bring in external books through web sharing. A popular hack was to make notes from the external books, take pictures of them, and

turn them into a PDF file which then could be transferred to the tablet. A lot of people were sharing these files which became a nationwide thing.

LH Were the exam proctors aware that students were accessing books and notes that were not allowed during the exam?

G I went to a strict private school. Our teachers care more about virtue than about science, and they did not let us cheat. But we took some exams with the tablet at a public school because it had a server room approved by the Ministry. The exam proctors were from the public schools, and most of them were not strict, not professional, and not ethical. The exams were a joke. Most of the students were cheating.

When we had to take the exams at our school, a lot of people thought this would be a disaster because they could not ‘cheat’, and by this, I mean access the external books and notes. This meant everyone actually studied. Another thing to consider is that this was the first time we faced an exam with the new types of questions. We found them to be very hard questions, very critical. I left the exam hall saying to my friends, ‘These questions are going to be a problem next year’ (in the Thanaweya Amma).

LH How were the new exam questions different?

G In this new system, every question is critical. The questions test your critical thinking skills. They are checking if you’re smart or not. This became an IQ exam in the end, which is not a good thing because life is not like that. This new system was not rewarding those who work hard, it was rewarding those who are intelligent. You might ask, well, what’s the difference? Imagine you have a question, and you memorize the question. This shows that you worked hard. You might not be smart as in having a high IQ, you just worked hard to memorize the question. We learned that we were not prepared for this new approach since we could not learn through memorizing. We wondered what we were going to do. Then came the coronavirus. That changed everything. Exams during the year (Grade 11) became meaningless, a joke, because they were online. Everyone talked with each other to solve the questions during the exams. It was as if there were no exams at all.

5. Preparing for the Thanaweya Amma during the Pandemic

LH The third year of high school, Grade 12, is a critical time when students are preparing for the high stakes Thanaweya Amma exam. How did you approach the year?

G Everyone knows that the third year is the most difficult, the most decisive. It is the year that decides our future. It is also the prison you have to enter for a year. I spent three full days before starting the year thinking about what I wanted to do. I found that science was the only thing that would lead me to doing something good, something virtuous. I am good at sports, but that's not something that would really benefit anyone, it's just entertainment. I thought that if I wanted to excel at something, it had to be science. So, for my exams I picked Biology, Chemistry, Physics, all the science domains. I even took a free online course in Computer Science from Harvard university because I thought Computer Science would probably be the field I would get into. Everyone was surprised that I was taking a course not related to the Thanaweya Amma exam. The question going through my head was, 'Will I succeed?'

LH What was it like to start that critical last year of high school during the pandemic?

G This was a disaster because we had to stay home for months on end. In normal times, we would have stopped going to school and spent the year in private classes—seven courses, three-hour lectures, seven days a week. That's one subject per day, the homework, and all of that. But when we entered Grade 12 it was different because of COVID-19. Most of the famous private instructors decided they were going to hold their classes online. We did not have the option to go physically to a class. At first, we were like, okay, that's cool, because at least we have more time to study. But all of us overlooked the most crucial thing, and that's the social element. When you go to a class you get to talk to people, laugh with your friends. Online there is no interaction, meaning there is no emotion, meaning you are a robot. And that was horrible. The first week passed online, then the first

month, and it kept going. There was that moment when you realize this is going to be your life for the rest of the year. It started feeling like a prison. Everyone was having their own kind of breakdown. Not a single person that year did not have a breakdown. It was just a matter of when. Everyone was depressed. I saw friends going through breakdowns and it wasn't easy.

LH How did you handle the isolation of the pandemic?

G Personally, I stayed home for six months. One day I had enough. I called my friends and said we have to go out. They were like, 'Yeah, screw this. Okay, let's go out'. This was a group from school who were hardworking, at the top of the class and all that. So, we went to this café to hang out for the first time in months. That was 11 March. Little did we know that three of us from the group would get the virus, including me. That was a comedy, a black comedy. This was the only time we went out and this thing happened.

One of my friends thought he gave the virus to us because he went in-person to a private class. He called to say he was really sorry. I was like, 'Oh no, don't worry. It is just that my future is ruined, but don't worry'. I had the real coronavirus. I was in bed crying out in pain. I couldn't move, couldn't walk, couldn't do anything. The only thing I wanted to do was just sit and study. But I couldn't sit because my back hurt. Everyone in my family was worried as hell. March turned to April, and I still had the virus. Ramadan came and I started really questioning things. What was this, to be imprisoned in a room, in the same room for seven months, not knowing when it would end? It was hell. The entire year was trauma. The entire year was difficult. While I was in that heart of darkness, the only light that shined was through studying science. The only thing I cared about was science. Thank God I eventually got out of the prison. Eventually I recovered and got back to studying and was able to attend the exam.

LH The Thanaweya Amma exams took place in-person with some precautions.³ What was your experience of taking the exams?

3 For information on how the MOETE dealt with the exam during the pandemic see the video, 'Exams During Covid-19 in Egypt', 19 June 2020, <https://www.youtube.com/watch?v=...>

G The first thing was that the exams happened in the peak of summer with temperatures of 40 degrees. There were no fans in the exam room. We did not even have air to breathe. This was traumatizing. This was a terror. This was unlike the terror of the school year because that terror motivated you. But this one traumatized you for no reason. What was this? Who decided not to have fans? When we asked, they said, 'Well, it is because of the coronavirus'. But we know that was not the reason. We know they did not install fans because they are expensive, and they do not care. They couldn't care less. But we did not have time to complain because the exams were happening. We had to accept that we were going to take the exams in this condition.

I remember looking down at myself during the Chemistry exam drenched in sweat. All I could think of was that I had to be careful so that the paper wouldn't drown in water. I took out tissues and put them in my hand to stop the perspiration from dripping onto the paper and wrote carefully. I looked around to see how my friends were managing. Some of them brought towels to wrap around their neck to stop the sweat from getting in the way but it didn't work. They had to use the towel to rub their face every few seconds. This was horrible. We studied an entire year for this exam! And there was no one to complain to. I do not know if Dr. Tarek knew about this environmental problem. I do not think so.

But that wasn't the only thing. Just a week before our first exam in July, Dr. Tarek held a press conference and announced that exams would be on paper. We would not be allowed to bring in the tablet. Tablets would be closed, and the system locked. We could still bring in the official textbook for the subject, but no tablet. This was a disaster.

LH You and your friends had spent the entire year studying, so why was it such a disaster that you could not bring the tablet into the exam?

G During the third year we thought we did not have to memorize anything. (This was the principle of an open book exam that Dr. Tarek had been advocating.) We were planning on uploading our notes to the tablet. With just one week's notice, we had to figure out something else

to do, so we innovated here. We were allowed to take in our schoolbook. What many students did was to use every empty space on every page to write in notes (see Fig. 26.1).

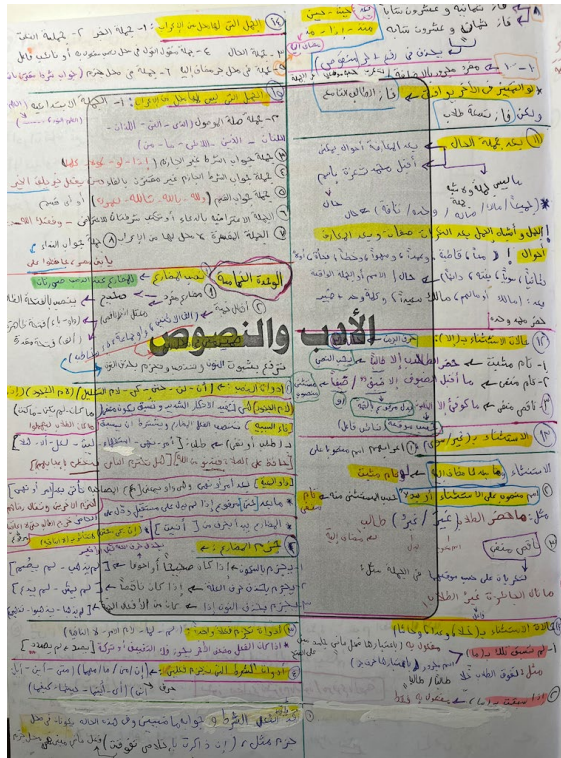


Fig. 26.1 Arabic textbook with handwritten notes by Grade 12 student, 2021. Photo by Linda Herrera.

For certain subjects like Physics, we needed a different solution because it was not enough to write notes into the textbook. A technique that many students adopted was to produce a book that looked like the government textbook, but composed of all the notes and material we needed. Basically, this meant making a fake textbook. The way we did this was by using Adobe Acrobat to create all the pages in color (see Fig. 26.2), and then to wax on the cover from the textbook and bind it to make it look like the official schoolbook (Fig. 26.3). This was a hack in every way. If someone opened the book and did not look too hard, it would appear to be the schoolbook. Many students took this kind of hacked book to the exam (see Figs 26.2 and 26.3).

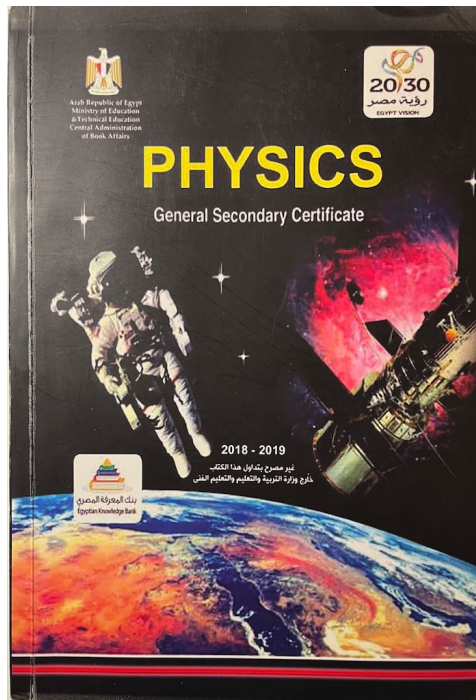


Fig. 26.2 The cover of a hacked Physics textbook made by a student, 2021. Photo by Linda Herrera.

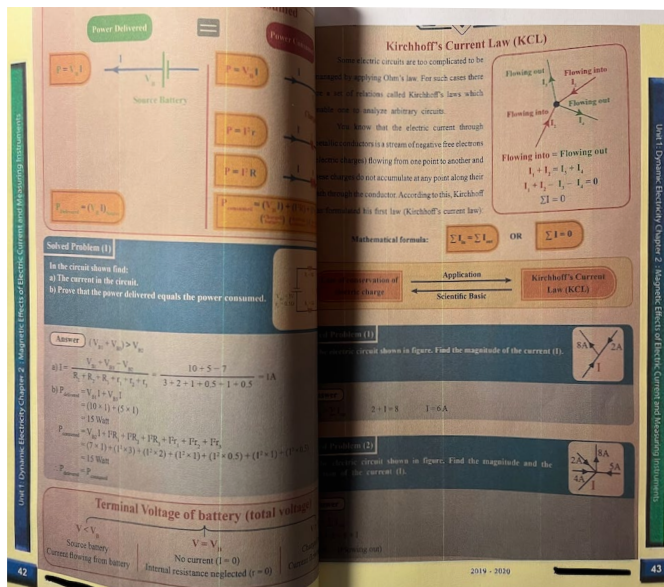


Fig. 26.3 The inside of a hacked Physics textbook with typed notes to resemble an official book, 2021. Photo by Linda Herrera.

During the Physics exam, the proctor stopped at my friend's spot who was sitting across from me, someone who was a top student by the way. He told him, 'Give me your book'. I knew this guy was using a hacked Physics book. He told me later that he thought this was the moment where all his future would be ruined. Like a scene in a Hollywood movie, everything was happening in slow-motion and very dramatic. As he handed him the book he was thinking, 'Do not appear suspicious. Do not say anything. Just give him the book'. The proctor took the book, held it up and said, 'Good luck'. Nothing happened.

6. Why Students Circumvent the Rules

LH There would have been serious consequences for anyone who got caught bringing in hacked books or cheating in any form. Why did even the top students take this risk? Do you think it is ethically wrong to cheat?

G Yes, it is wrong to cheat. But I do not consider what students did with the books as cheating. I know students who spoke to each other or entered the exam room with their phones. That is cheating. Entering with your notes written in an open book exam, even with a hacked book, was not something we considered 'cheating'. I mean, replacing the pages of the schoolbook with pages of our own notes, was technically not cheating, since these notes were the same content we would have written with our own hands on the pages of our textbook if we had enough space to do that.

The reason we did this was because we do not trust the system that makes the rules. Who decided we should take the exam in 40 degrees Celsius weather? Who decided that schoolbooks were allowed but notes were not? I mean, changing the pages of the textbook would not affect whether you knew the answer to the question or not. If you did not study, changing the pages would not amount to anything. We studied for the exam for twelve months. We were not trying to be immoral or something. We were just playing by our own rules. We did not trust the thinking behind the decisions. We did not think the rules they set were valid. We decided that bringing our own notes was a good idea. In our thinking, we wanted to secure the exam, secure a high score. But we also wanted to study and learn.

We said, let's make sure we learn the science, because there is going to come a day when we want to do something in science. We really studied because we care, our parents care, and we wanted to get into university. Other people did not do this. They cheated and that's it. For example, our class had about 250 people. Only 50 cared about what they were studying. 50 out of 250 is not a big ratio. So why did some of us 'cheat'? Because we are in the Hunger Games where it is survival of the fittest. Some people had breakdowns during the year and did not recover. They lost. To win the Hunger Games, you have to be the fittest, and maybe the fittest is going to push you to do ugly things.

LH You talked about how students help each other with the exams. Do you see a tension or a contradiction with helping people you are in competition with?

G There is always a sense of solidarity between individuals entering a competition. We talked with each other and shared resources like notes and hacked books. Even on Facebook groups when someone asks a question, they get help from people they do not know. People in Egypt are very religious, and we believe in fate. Helping each other is something people believe cannot possibly affect their future. But though we support each other, there is still a sense of competition. Fundamentally, this is a competition. It is very simple: the best of us will win.

LH Does the reality of widespread cheating, or circumventing the rules, however you want to describe it, mean that the system is not going to produce ethical people? Or do you think we should reevaluate how we think about ethics?

G The system never did produce ethical people because cheating was always a part of the Thanaweya Amma. What was new was that we had the tablet where we could put all these things. I have a friend who would not cheat, period. He wanted to study medicine, and he would have been really good at it. But with his score he got into a business school. He doesn't like business. He doesn't like marketing. He talks to me every day about how he is depressed and has lost purpose in life. There are people like him all over the country. These people are blaming Dr. Tarek, but this is not his fault. He did not do this. Dr. Tarek said that the first task of education should be virtue, morals, to create better people with an aim and a purpose and a character. That should be the focus of education, not the grade in Chemistry and Physics. If you do not create a person with

character, an identity, a code of honor and a code of ethics, you are setting yourself up for failure. The system pushes us towards cheating by having exams that define our future. We are living in an environment where cheating is almost everywhere. I mean, my friend who would not cheat still earned a high score, but not compared to the scores of people who cheated. We heard about many exam halls where the proctor let students take in any books. They let people openly talk to each other. I think people all around wanted Dr. Tarek to fail.

LH What makes you think that people wanted Dr. Tarek to fail?

G People hated the fact that if Dr. Tarek succeeded with the education reform, it meant that he did something that they were not able to do, that they could not do. They hated the man and tried everything to make him fail. People in parliament were really against him.

7. The Influence of a Minister

LH Why do you think some people, like the ones in parliament, could not see Dr. Tarek as an asset for the country?

G They thought he was a dreamer. Let me explain this. If you're a student struggling to get by and then there is this spoiled kid who comes in with all these fancy tools and fancy brands and he's doing this great work and everyone is applauding him, you will resent him. For them, Dr. Tarek was like this spoiled kid. They were criticizing him because he studied in America (for his PhD). They saw him as having some advantages over them. And worst of all, he dared to have a dream for Egypt. The saddest thing about it was that he was the first person in the government who had a vision for education. He was someone with a clear vision. Whether it worked or not, that is not the point. The man is a genius in some sense. I remember watching a video of him going to the Education Committee in the parliament and saying, 'I am Tarek Galal Shawki. I said I am going to apply a new education system, and I am going to apply it next year!' And they tried to stop him. They said, 'No, doctor. We are here as the parliament. What you are saying is not constitutional'. They began fighting. I remember it well (Shawki 2018). At the end, he did his best.

But you see how people behave when you are trying to do your best. The change will not come here. There is no change here.

I came to realize that the antidote to all the corruption we see today is to create better people at the individual level. If we focus our attention, time, and effort on a single individual, we will produce a good person, a virtuous one. And if we do so for multiple individuals, then we have a group, multiple groups, and we will eventually have a virtuous, moral community, hardworking, with high standards. Dr. Tarek knew that building an identity was far more important than teaching science at schools. That was his vision for the next generation.

LH Did you receive the grade you were hoping for?

G I needed a grade that would get me to science. I wanted to achieve the vision of Dr. Tarek. In the end, I did not get the grade to study Computer Science in a public university, which would have been my first choice. Fortunately, my family has the means to send me to private university which is easier to get into in terms of grades but more financially difficult.

LH Why do you feel so strongly about pursuing science, and in particular Computer Science? Are you from a family of scientists?

G No, my family are more in law and public service. I would say my family is like any other Egyptian upper middle class family. Most of them served in the government after obtaining higher education degrees. I used to look up to one of my cousins a lot when I was younger. I asked him how I could be like him. He said the first thing is that I must be educated. And so, from the first year of middle school I bought a lot of books on history, politics, things like that. But in the end, I shifted to Computer Science. Dr. Tarek influenced this shift. If it had not been for him, I would not be here. I would not have been so excited about pursuing Computer Science, about the possibility of being a researcher. This is all his work. This is all his vision coming to life. For me, the man was a model to follow. This is more crucial than an exam or whatever. Dr. Tarek set high standards for us. He set a clear vision. He did something to help build our character. One of Dr. Tarek's videos really affected me. He was saying that people back in the day used to have more dignity and self-respect, they had purpose, they had aims. Life is not about getting

a degree and hanging it on the wall. Life is about a journey filled with learning. Education is the preparation for a journey filled with learning. If you focus on something that matters, maybe you will leave your name in history. I became a Computer Science major and am now at the top of my class. Why? Because of the standards he set for us. It is his vision, and hence why I am a great admirer.

LH How did you feel when Dr. Tarek was replaced as Minister (in August 2022)?

G Really sad. He went through a tough time, honestly. I hope he is still there in the background doing his work with the current Minister.

LH If there had been a different Minister of Education, do you think you might have still found your way to Computer Science?

G No, absolutely not. I saw how people from the old system, like my brother who is two years older than me, were stuck in the old ways. There was no dream.

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27. Teachers in Search of Their Identity: A View from Ismailia during Times of Change

Mohamed Elsayed and Menna Ahmed

Abstract

In the early years of the Education 2.0 reforms, teachers were largely viewed by state actors as a 'problem'. Through interviews with four teachers from urban and rural schools in the governorate of Ismailia, this chapter asks how teachers as individuals and a professional group, understand their relevance in Egyptian society. It focuses on three main themes: the discourse coming from the Ministry of Education and Technical Education (MOETE) and the Minister himself about the position of teachers in the 'new education system'; digital transformation in relation to teachers; and how exams, grades, and education markets continue to drive the system. The authors argue for an approach to education reform in which teachers are viewed as active agents of change rather than obstacles to it and stress the need for a renewal of the human factor in the learning process, even as new technological tools and platforms saturate the education space.

Keywords

education technologies, Ismailia, oral history, rural schooling, professional development, teaching profession

1. Are Teachers the Problem?

In 2016, the ‘Year of the Youth’, the Egyptian presidency sponsored the first National Youth Conference in Sharm El Sheikh (Egypt State Information Service 2016). During the conference, President Abdel Fatah El-Sisi emphasized that the country was preparing for a total reform of the education system to meet the country’s economic needs and challenges and contribute to a national renaissance (Abdelrahman 2016). A range of education models from different countries were under discussion. The President was particularly looking for a model that would ‘build the whole human being’ by instilling certain morals, knowledge, and behaviors in pupils (Sada Elbalad 2016). However, teachers did not appear to be an essential part of this plan. In a speech about this planned Egyptian renaissance, the President talked about building an elite cadre that would bring the rest of society forward. He said,

I will create a very well-educated class. The rest of society is not important (*baqi al-mujtam’a mish muhim*). This class will lead society and take it forward. The rest is finished (*albaqi khalas*) (Sada Elbalad 2016: 5:20).

In 2017, the President appointed Dr. Tarek Shawki as the Minister of Education and Technical Education (2017-2022) to lead the ambitious undertaking to build a ‘new education system’ or ‘Education 2.0’. When the reform was first announced, teachers expected to be consulted and engaged throughout the process (Afifi 2018). They soon found out that not only were they not going to be consulted, but they were expected to make sacrifices. President El-Sisi specifically told teachers to refrain from asking for any improvements to their situation, particularly around salary, because the state was economically poor and could not afford such things (Extranews 2018; Mirshak 2019).

Instead, the top-down reforms attempted to restructure the education system with a new vision and philosophy heavily oriented towards digital change (El Tawil 2018; Masrawy 2018). The El-Sisi government had been turning to technological solutions across society as the cure for deep-rooted and complex problems such as inefficiency, corruption, taxes, poverty and inequality, and low-quality education. Education technologies were being employed to ‘neutralize the human factor’ by, for example, bypassing teachers in things such as grading or delivering lessons. As the Minister presented the public with a vision and roadmap

for the new system, it became increasingly clear that teachers were marginal to the reform and often presented as an impediment to it. The decline of the teaching profession and the scapegoating of teachers is not something new. It has been occurring over decades as the very meaning of 'education' has progressively lost its association with knowledge and learning for the greater social good and been more tied to performance on tests and growing markets (Herrera 2022: 139-141).¹

Tarek Shawki, a 'techno-optimist', someone who believes there are neat technological solutions to complex social problems, integrated tech platforms, services, and tools into the system to compensate for teacher shortages and overcome problems with poor teacher performance (Herrera 2022: 14). For instance, he said, 'We have provided new learning resources to compensate for the inefficient teachers' (cited in Zakaria 2021). He also said,

With the existence of the tablets, the student's relationship with the ministry will change. We will be able to reach each student. The student who does not like the explanation of the classroom teacher will find another explanation from another teacher on the tablet (cited in Hosney 2020).

The Ministry invested immense financial and technical resources into new platforms and devices such as the Egyptian Knowledge Bank (EKB), the lessons platform Madrasty, and the tablets for high school students (see Chapter 23 in this volume). Teachers simply could not keep up with the influx of new platforms and initiatives. The digital transformation policy in education changes the role of the teacher to that of a 'facilitator', and this is supposed to 'liberate' students from the traditional student-teacher relationship (Abdelhalim 2020). Teachers understood this as a strategy to make them redundant.

The Minister also disparaged teachers on several occasions and put them on the defensive. For example, in a parliamentary session he proclaimed that he only needed 20% of currently employed teachers (Al-Quds al-Arabi 2017), and that paying teachers' salaries was a form of social aid (*ma'awnih ijtma'iyh*) akin to charity (Sobh 2017). The Minister was also reported to have said, 'Half of the teachers are thieves

1 As a study of primary school teachers in Menoufia shows, teachers have most job satisfaction when there is 'meaningful work, sense of community and organizational values' (Mousa and Alas 2016: 252).

(*haramiyah*), and the other half are inefficient' (Alquds 2017). While this latter statement has been disputed, the fact remains that teachers felt humiliated and unappreciated as the government rolled out the new reform and its 'digital solutions'.

During an education committee meeting of the Egyptian parliament in 2017, the Minister stated that teachers who were ready and capable of coping with the changes would receive support and training from a company called Teachers First. The training, funded through a World Bank loan (World Bank 2018) would go to those clever teachers (*al-mo`alem al-shater*) who would not need much support but would 'quickly know the way by themselves' (cited in Ali 2017). He did not define what he meant by 'those clever teachers', but many teachers took this as a slight.

By talking directly with teachers, our aim is to document teacher experiences within the first five years of this major education reform. The teachers in our study, all from the governorate of Ismailia, repeatedly invoked the theme of their social and occupational relevance. This prompted us to highlight the questions: How do teachers themselves, as individuals and a professional group, view their relevance in Egyptian society? Has their relevance changed since the start of the 2018 education reform, and if so, what are the consequences of this?

2. Teachers from Ismailia

Egypt has historically been a highly centralized state with political, economic, and cultural power concentrated in the capital. Consequently, Cairo has come to represent 'Egypt' for many decision-makers. Much of the educational research is also centered on Cairo. Under-researched provincial regions have often been treated as one homogenous block, regardless of their differences, thereby reinforcing geographical power imbalances. This blanket treatment of different regions and contexts gets replicated in the implementation of education reforms, which tend to ignore specific social and cultural differences, such as those between urban and rural areas. The governorate of Ismailia is a largely rural region except for the city of Ismailia which has a population of about 1,400,000. It is situated on the western bank of the Suez Canal, 120 kilometers from Cairo. Despite having better material conditions

than other governorates in Egypt, it still suffers from higher rates of unemployment and lower incomes than the capital (see Fig. 27.1).



Fig. 27.1 Map of Egypt with Ismailia circled. Source: Nationsonline.org, https://www.nationsonline.org/oneworld/map/egypt_map.htm

This chapter is based on oral history interviews with four public school teachers from Ismailia. In our selection of teachers, we took into consideration various life experiences, career stages, and rural and urban contexts. We carried out between two to four interviews with each participant throughout 2022. The goal was to build a picture of how these teachers experienced their profession during the transition to the new education system.

We, the authors, are two researchers with an interest in studying education in Egypt and are both products of the public school system where we suffered painful experiences (Yehia grew up in Ismailia, and Menna in Cairo). We used to think of teachers as our adversaries and the sources of our misery. We held them responsible for all the system's

pitfalls. During this research however, we approached teachers in a more open way and with a fresh perspective. We sought to learn about them as human beings, as part of a professional class. We came to understand how they regard themselves as both victims and active participants of the system.

Among the teachers represented, three are male and one is female. Two are from villages and two are from the city. We use pseudonyms to protect their identities.

Mr. Bahaa is a recently retired biology teacher. He used to teach at a mixed-language high school in the city of Ismailia. Over his career, Mr. Bahaa participated in many professional development (PD) training courses, including one in the UK. Even though he is retired, he remains active as a private tutor with an average number of eight to ten students per session. He is a self-learner in his field, familiar with technologies such as tablets and online platforms, and also well-versed in traditional resources.

Mr. Halim is an early career Arabic teacher working in a village. He used to teach in a high school for boys and currently teaches in a middle school. He derives his main source of income from giving private lessons to the high school students from his previous school. Before becoming a teacher, he worked as a goods carrier and computer technician. His experience in using technology gives him the confidence to adapt to the new education technologies, unlike many of his colleagues who have limited skills and familiarity with them. Mr. Halim regards the teaching profession as providing him a source of respect and social status in his village.

Ms. Hanan is based in the city of Ismailia. Her long career teaching math in middle school spans three decades. She currently teaches in two schools. She has taught in all male schools in both Egypt and Saudi Arabia, and in all female schools in a local village. She does not give private lessons and plans to retire within a few years. She is familiar with technology in general but is not interested or experienced in using it in her work. After working thirty years in the system, her average monthly salary in 2022 was 5000 EGP (the equivalent of 170 USD), hardly a livable wage.

Mr. Sabry grew up in a village and currently works as a high school math teacher in a local public school. He is simultaneously pursuing a Ph.D. in agricultural science and is deeply involved in the farming

community. He does not work as a private tutor. His village lacks a digital infrastructure despite not being far from Ismailia city or the Suez Canal area, and he is neither familiar with nor interested in using technology.

3. Digital Transformation

Computers and other digital technologies have been a regular feature of reform agendas in Egyptian education going back to the 1990s. Computers were introduced to public schools starting 1994 (Bakr 2011). But since 2014, the drive towards digitization experienced a leap as the government of Egypt sought to digitally transform all major state sectors (see Chapter 23 in this volume). By and large, teachers were not prepared for the scale and speed of the digital transformation of education.

Mr. Halim was frustrated by the lack of teacher preparation. He declared, 'It felt like the Ministry was taking the teachers to the sea without teaching them how to swim'. He was specifically referring to the Ministry's decision in 2018 to issue a Samsung tablet to all Grade 10 students and integrate new technologies into classrooms. High school teachers learned about these initiatives during the summer of 2018, shortly before the start of the academic year. When they returned to school in 2018, teachers found their classrooms fitted with smart boards but had no idea how to use them. Many of the teachers in his village did not have smartphones and had never even used a computer. He said with exasperation, 'Those teachers were supposed to change their old methods and use these new technologies and smart boards. Can you imagine that?!' Some teachers took matters into their own hands. One of his colleagues hung an old chalk board over the smart board so he could explain the lessons to his students in the 'old fashioned' way. But Mr. Halim lamented that this kind of behavior made teachers look 'helpless and ignorant' in front of their students.

Mr. Bahaa also remarked that teachers who could not deal with the technology looked incompetent. He said,

The students acted like their teachers were irrelevant. The things they used to need from the teacher, like their subject expertise, were taken away.

Not all teachers were left in the dark. A select number of high school teachers received trainings prior to the start of the 2018 year, but Mr.

Halim was not one of them. He asked, 'How did the Ministry determine who would receive the training? And what about the rest of us?' Mr. Bahaa, being from Ismailia city, felt fortunate to have been identified to attend a short Teachers First training session. He appreciated and understood the new tools and tried to use them. During class time he made use of the smart board and streamed videos from the Egyptian Knowledge Bank (EKB), but he struggled to get the students' attention. He said, 'I was begging the students to sit still and pay attention, but with little success'. He felt his authority and influence in the classroom were further weakened after the Minister announced that students in high school would no longer be graded on attendance, which meant the little leverage class teachers had was gone.

The new system weakened the role of classroom teachers and had the unintended consequence of creating more demand for private tutors. Mr. Bahaa genuinely thought a specific aim of the reform was to sever teachers' ties with their profession. He said, 'Imagine the thing you think of as your only job in this life turns into a totally different role that you never signed up for'. Mr. Halim echoed this sentiment and said,

I want to tell you something. Nobody cares about what we teachers feel or what we are going through. Dr. Tarek doesn't represent me, and he doesn't represent the students. And we do not understand him. All I know is that when I go to school, I find new laws that have come suddenly from top to down. I do not know what is going on and I do not know what to tell my students.

The more seasoned teachers had seen years of technology 'upgrades' and remembered them as being mismanaged or generally ineffective. Ms. Hanan recalled an initiative in 2006 to 'bring technology to the classroom'. She had to take a mandatory training in Microsoft Office and barely learned the basics before being told she had to lead the training of teachers in her district (this is called the cascade method of training). She said, 'This was not serious training'.

Teachers and students have been introduced to one tech tool after another, often making the job of teaching more difficult. Mr. Shokry said that tablets were simply distracting students who 'kept playing movies while we were teaching'. This experience was shared by Mr. Bahaa who found it impossible to teach while students had their tablets in the classroom. Even though these teachers eventually received training on how to use

the tablets and smart boards, they nonetheless felt ill-equipped to do so effectively. There were also problems with the online platforms. Mr. Bahaa described his experience accessing the Ministry's website, downloading resources, and connecting with teachers as very difficult and a waste of time. Meanwhile, Ms. Hanan who had to use the Learning Management Slatform (LMS) Edmodo during the COVID-19 pandemic, described it as very confusing. She only used it a couple of times with the assistance of her daughter, and never had any contact with her students on it. Mr. Shokry said that during the pandemic when schools were closed, he had almost no communication with his students on any platform.

4. Teaching in Village Schools

Unlike in Ismailia city, schools in the village were especially ill-equipped for digital transformation due to the lack of proper equipment, a weak internet infrastructure, and high rates of poverty. Even the more tech-savvy village teachers like Mr. Halim admitted, 'If I had not received technology training before, I would have been very frustrated with the Minister'. Mr. Bahaa tried to use the EKB but found it 'very confusing and complicated'. He said that students who accessed the EKB were 'shocked and overwhelmed' by the amount of information and questions.

In an earlier wave of technological reforms in 2014, the Ministry selected Mr. Halim to participate in a professional development training program on computers. He had to travel three hours to Zagazig city. On completing the program, he became responsible for training groups of local village teachers. The problem was, he found it nearly impossible to apply what he learned in the local schools since the necessary equipment was either absent, obsolete, or locked away in a storage area to protect it from 'damage by students'. The village itself had only two outdated computer service shops and poor Internet connectivity. Moreover, he found that teachers did not show an interest in these new tech-centered approaches due to the realities of their rural environment.

Ms. Hanan had a unique perspective because she worked in both urban and rural schools. She expressed how students in the village valued their opportunity to go to school and treated their teachers with a lot more respect. Even though traveling two or three times a week to the village school required a big effort and high cost on her part, she felt it was worth

it. Teaching there filled her with a sense of satisfaction and appreciation. In contrast, when talking about the urban schools, she echoed Mr. Bahaa's bitterness about how teacher professional development on technology and the new system had been neglected which led to students losing respect for them. She recalled how students mocked their teachers and sometimes even abused them physically and verbally.

Mr. Halim also talked about feeling fulfilled professionally from working in a village school. After starting his teaching position, he decided to quit his manual job as a construction worker even though he benefitted from the extra income. He did this mainly to avoid his students calling him 'Usta', a Turkish term mainly used for manual workers. Mr. Halim explained that in the village, teachers are still treated with respect. 'You are teaching many of the village's kids for free, so they are thankful... In the village, everyone is familiar with each other. They treat the elders, especially teachers, with respect'. He added that because of the value people in the rural areas place on being educated, the reform did not bring much change in terms of weakening the teacher's role (Sayed 2024: 11). Mr. Halim spoke proudly about his role in supporting students, some of whom were accepted to top faculties such as medicine. Similar feelings of accomplishment were rarely mentioned by teachers in the city.

5. Teachers Turn to Social Media

In the initial years of the reform, the Minister Tarek Shawki made statements about teachers and parents being obstacles to realizing the fruits of the new education system due to 'their inability to comprehend' and embrace the new technology tools (Abu Zahra 2019). Though they struggled to use tools developed by the Ministry, they were more inclined to adopt free applications such as Zoom, Facebook Live, WhatsApp, and Facebook groups, particularly after the COVID-19 pandemic when schools closed. Teachers talked about how technology was more relevant in their lives than ever, regardless of their age, place of residence, or cultural/economic background.

For example, Mr. Bahaa praised the efforts of biology teachers to initiate Facebook groups during the pandemic. In his view, these became more important than any official platform set up by the Ministry.

Similarly, Mr. Bahaa relied mainly on Facebook groups to exchange views and information about the new exam system with teachers from across the country. WhatsApp also proved to be an extremely useful tool for information sharing and support between teachers. Mr. Halim used the application to organize his classes, share resources and assignments, and communicate directly with his students. He did not use the Ministry's official Learning Management System Edmodo. Ms. Hanan also preferred WhatsApp over email or Edmodo to communicate with her colleagues during the pandemic. She joined groups where teachers shared views and advice about the reforms.

Zoom, Facebook Live, and WhatsApp with their synchronous features, provided teachers with a sense of the actual classroom, unlike the recorded videos and automated responses of the Ministry platforms 'Madrasty' and the EKB. Mr. Bahaa was even more creative by using the services of an exam application called 'Ekhtebare' to conduct and correct exams fast and efficiently while still discussing the answers with his students.

These examples illustrate the real schism between the Ministry's plan for digital transformation on one side, and teachers' reality and ingenuity on the other. Teachers adapted to the COVID-19 lockdowns and were creative in utilizing an array of solutions no matter their ages, social backgrounds, or locations, and proved capable of embracing various kinds of technology that suited their needs and circumstances. Free services through Facebook and WhatsApp groups were the actual 'tech solutions' for teachers on the ground, rather than the more complex apps and less user-friendly platforms created and endorsed by the Ministry.

6. The Persistence of High-Stakes Exams

The Thanaweya Amma exam has long been a staple of the education system in Egypt. This combined high school graduation and university entrance exam has profoundly shaped the learning culture and economics of education. Despite some attempts to change the system, exams remain firmly at the center of the educational process.

When asked about if the Thanaweya Amma exams have changed since the reform, Mr. Halim sarcastically said that in his village, the students initially thought that they would take final exams on their

tablets while sitting in a café. Students were looking forward to a change in the Thanaweya Amma which they all considered a nightmare. They hoped for a less complicated system but instead found the new exam questions confusing and complex. Because the infrastructure was not ready in time for the initial exams they had to take on the tablets, they experienced technical problems which caused them high degrees of anxiety. As Mr. Sabry explained, 'The students were used to the paper exams, and this transition was scaring them'.

Another cause for anxiety was the new format of the exams which used multiple-choice questions (MCQs) combined with essay questions. Mr. Bahaa explained how the students at the beginning used to underestimate the new exams, thinking that they would simply be MCQs that could be randomly answered. He then realized that the style of the new questions was much more complicated than people originally thought. Questions required critical and analytical thinking skills rather than memorization. When asked if teachers needed to change their methods to prepare students for the new types of exam questions he answered,

Yes, for sure. Now I need to continuously connect the curriculum topics to the students and train them on how to understand the connections between the different topics in the same subject. I do not just train them to memorize everything, but to understand the questions. And this is really hard because it's a skill that neither the teachers nor students were ever trained on.

He went on to explain how his colleagues used to gather in the teacher's room and talk about how they were confused about the questions in the question bank.

The new exam system was supposed to tackle long-standing problems relating to cheating and exams. Cheating has regularly caused the government tremendous embarrassment (Independent 2020; Middle East Monitor 2018). The new exams were supposed to reduce the need for private tutoring. Tarek Shawki stated, 'With the new education system, private tutors will be of no benefit, especially since the system will be based on continuous evaluation, not a final exam'. Despite such confident statements, the new system had the opposite effect, and the private tutor market has boomed in recent years (dmc 2019; TeN TV 2018).

When students faced the complexities of the new exam system, they rushed to private tutors whom they hoped would help them to achieve

high grades and learn how to hack the new style of exam questions. As a private tutor himself, Mr. Bahaa started to feel useful again. He said, 'Parents would come to me begging to help their kids because an exam was coming, and the students didn't understand anything'.

Mr. Halim had a similar experience in his village. Students started looking for tutors who had a good reputation for using technology and could train the students on the new style of questions. Because of COVID-19, many private tutors began to offer classes and learning resources online. Those with ICT skills were at an advantage and many of these teachers were hugely successful. Some of the most successful online tutors used the Ministry's online content. Mr. Halim and Mr. Bahaa both benefited from the new online resources. Mr. Halim's nickname was 'the octopus' because of his multifaceted skills to use various tools, references, and applications to train the students. He used WhatsApp groups for discussions, Microsoft programs for delivering the lessons, and content from the EKB and other platforms for understanding the exam questions. Such skills were very rare in a small village which put him in high demand. Normally, village students would have to travel to Ismailia to get private lessons with such high demand teachers. Mr. Bahaa stressed that the pandemic showed everyone, even the Minister, that there is no alternative to the teacher. The prosperity of the private tutor market became the best evidence for this claim.

7. The Relevance of Teachers

In the early years of the reform, teachers were deliberately alienated, underestimated, and made to feel that technology could replace them. Five years into the reform, the official discourse around teachers has softened. In his final months as Minister, Tarek Shawki's tone changed. He even used religious language to describe teaching as the most beneficial and valuable profession to the people. He said, 'The teacher's impact on a child lasts for thirty years, this is something great' (Abdelrahman 2022).

Our research with four teachers in rural and urban settings in Ismailia emphasized three things: 1. Technology is creating clear winners and losers and causing imbalances in the teaching profession; 2. Teachers are a crucial part of the educational process, especially in rural settings;

and 3. Despite all the reforms and attempts to deemphasize the exams and change the system of private tutoring, private lessons are not only surviving but thriving.² A viral video of a philosophy teacher's motorcade of three fancy cars with hundreds of students cheering for him provides a pointed example of the supremacy of the private tutor over the dedicated humble schoolteacher (BBC 2022) (Fig. 27.2).



Fig. 27.2 Procession and bodyguards. A legendary reception for a philosophy teacher at one of the private lesson centers. Sada ElBalad, 20 July 2022, <https://www.elbalad.news/5365406>

Technology has exacerbated inequalities in the teaching profession. Teachers with cultural and social capital such as knowing English and using and following the latest technology platforms and applications are at a clear advantage. For many, technology in education is neither fair nor empowering, as many teachers and students are forced to use new tools without proper understanding or preparation. Some teachers, including the dedicated and gifted among them, are left feeling either redundant or left behind.

The situation in rural communities may be different. As the teachers who serve rural areas communicated, formal education is still seen as a vital path for social mobility and a virtue in itself. Educators in rural

2 The government continued to wage a battle against cheating (Diab 2022). Dr. Tarek's successor Dr. Reda Hegazi (appointed in 2022), like so many ministers before him, had to address private tutoring. He put forward a proposal, which he later rescinded due to popular opposition, to allow private companies into schools to run private tutoring.

communities are held in high esteem due to their mission and role in teaching the village's children. In the city, teachers are treated more like service providers in a competitive marketplace. As students master the new learning technologies, teachers are more at risk of becoming obsolete.

Teachers are struggling to prove their value and relevance in the age of digital transformation and are facing a challenging future. They are likely to become more individualistic and lose the bond connecting them as a social and professional group. Because of market dynamics, income gaps between teachers are now wider than ever. The inability to freely self-organize themselves in the current syndicate system and the restricted public sphere leaves them with limited options. Building a collective inclusive body and movement able to negotiate with the government for their rights and voices seems a very remote possibility.

Ignoring the potential to strengthen relationships between teachers and students, and the influence of the teachers on the student's character, and vice versa, comes at a high cost. The reforms seem to be further eroding the teacher-student relationship and the role of the school. Imposing technology and minimizing human interaction strikes at the heart of the learning process, but the human factor is the very thing that needs vision to be preserved and improved.

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28. Primary School Teachers Leverage Social Media for Professional Development

*Linda Herrera, Menna Ahmed Saieed, and
Ayman Alhusseini*

Abstract

There has long been a consensus that quality teaching leads to better learning outcomes and that Professional Development plays a role in that process. Yet to be effective, Professional Development must be grounded in local contexts and practices. This chapter investigates how primary school teachers in Egypt have been leveraging social media for Informal Teacher Professional Development during a national education reform. They are expected to transition from a traditional pedagogy based on drills, memorization, and top-down teaching, to activity-based and student-centered approaches that align with the new multidisciplinary curriculum. Teachers' initiatives on Facebook, YouTube channels, and WhatsApp groups, show what they themselves identify as their professional gaps and needs, and highlight their skills, techniques, and communication and artistic styles. A better understanding of teachers' professional cultures can lead to more relevant programs for Professional Development in which teachers and their students can have better chances to thrive.

Keywords

activity-based learning, curriculum reform, Facebook live, inclusive education, Teacher Professional Development, in-service training, Tokkatsu

1. Teachers' Initiatives Online¹

Professional Development activities in the digital age, both formal and informal, have incorporated virtual learning, digital resources, chatrooms, asynchronous trainings, and other models (Borko et al. 2010). Since the COVID-19 pandemic, there has been an especial spike in how teachers in different parts of the world leverage social media for peer-to-peer learning in innovative ways and for a range of Professional Development activities (Mercado and Shin 2023, Ranieri 2019). Within education policy circles there has long been consensus that Professional Development leads to quality teaching, which leads to better learning outcomes for students with diverse learning needs (Darling-Hammond et al. 2017). However, there is no one-size-fits-all approach for how to cultivate quality teachers (Koellner and Greenblatt 2018). The local culture and material conditions in which teachers work should be factored into what constitutes 'quality' when it comes to teaching. Effective approaches to Teacher Professional Development (TPD) should be adaptive to local contexts and mindful of the conditions and learning cultures in which teachers live and work (Hennessy et al. 2022).

This chapter investigates ways that primary school teachers in Egypt have been using social media in the context of a comprehensive national education reform to build a 'new education system' also known as Education 2.0. When the reform began being rolled out in 2018, teachers were expected to transition from traditional classroom practices based on drills, memorization, and top-down teaching, towards pedagogies that enhance learners' higher order skills through a new multidisciplinary curriculum and activity-based student-centered approaches. As stated in the Ministry of Education and Technical Education (MOETE) concept

1 This chapter draws on a research report about online Informal Teacher Professional Development in Egypt carried out for the Teach for Tomorrow (T4T) project of the Education Development Center (EDC). The internal report, 'Mapping Informal/Formal Online CTPD Resources' (2023) was designed and supervised by Linda Herrera and Amr Orabi and carried out by Menna Ahmed Saieed and Ayman Al-Husseini with the input of Andrew Lewis, Randa Gaber, and Hala El Serafy. The authors would like to thank the Education Development Center for permission to include portions of that report in this chapter. Any potential errors are the responsibility of the authors alone. In 2025 the Trump administration cut USAID projects across sectors including education, leading this project to abruptly shut down.

paper, 'Transforming Teachers: Education 2.0 Teachers: A New Cadre of Educators' (2020),

Higher order skills and capabilities [are] replacing the current focus on rote learning and factual recall. The way in which pupils learn and are assessed will be transformed, with technology playing a central role for every student and teacher [...] Teachers need to adopt a much more active, participatory, engaging and learner-centered approach to teaching.

Through Informal Teacher Professional Development (ITPD) activities, primary school teachers have been creating tutorials and live sessions for fellow teachers about changes in the career ladder, how to make weekly schedules, and techniques for teaching in the 2.0 system.

In theory, the twenty-eight Faculties of Education (FOEs) in Egyptian public universities should be the centers responsible for preparing and training current teachers (in-service) and would-be teachers (pre-service) in the foundations and pedagogies of the new system. However, as of 2024, the FOEs had neither updated nor aligned their programs to the new system in any systematic way.² Instead, the MOETE relied mainly on four strategies to support primary school teachers' transition to the new system. First, it oversaw the production of the Teacher's Guides, which provide detailed instructions on how to manage specific lessons in each grade.

Second, teachers were required to attend periodic short trainings that lasted between a half day to four days. These trainings were usually provided by the textbook publishers and other private companies and often depended on the 'cascade' model, which can be cost effective since

2 To address this problem, the Ministry of Higher Education and Scientific Research (MOHESR) and the United States Agency for International development (USAID) have been working together on the USAID funded project, 'Teacher Excellence Initiative (TEI)', a five-year project (April 2022-March 2027) which aims to redress the disconnect between the Faculties of Education and the Education 2.0 reform. According to the USAID website, the activity aims to improve the 'quality and relevance of teacher preparation in Egyptian public universities so that current and future primary school teachers have the skills to increase student learning and advance the Education 2.0 reform. The Initiative had plans to establish undergraduate and graduate degree programs for primary-grade teachers at fifteen Egyptian public universities', <https://web.archive.org/web/20250201182020/https://www.usaid.gov/egypt/basic-education>. However, this project abruptly shut down in 2025 after the Trump administration cut USAID projects in education and many other sectors.

it uses existing teaching staff and can be carried out in short intervals. However, the cascade method also has disadvantages. As David Hayes, an expert in curriculum development and continuing Professional Development cautions, ‘using trainers drawn from successive tiers of the cascade also has potential disadvantages, the principal one being dilution of the training—less and less is understood the further one goes. Yet it is not the cascade model per se which is the problem, but the manner in which it is often implemented’ (2000: 137-138).

Third, the MOETE has invested heavily in the digital infrastructure to provide teachers with platforms like Learning Curve platform for their formal Professional Development trainings and tracking, and the Egyptian Knowledge Bank (EKB) with its repository of digital content such as PDFs of Teacher’s Guides and textbooks. The EKB also has a digital board for announcements about teacher workshops and events, but it rarely provides full records of those events.

Fourth, the MOETE launched a television channel with a companion YouTube channel in 2020 called Madrasatna to broadcast videos for teachers and students on the new curriculum for Grades 4-9 (see Chapter 22 in this volume). The comments section on the YouTube channel is turned off. These videos are not interactive like Facebook live videos, so teachers watch them in a passive way. As research about education technologies (EdTech) confirms, interventions that focus primarily on hardware, software, and resources, are ineffective compared with those coupled with other measures to promote pedagogic change or teacher development (Hennessy et al. 2022).

To fill gaps in their Professional Development, a number of teachers have taken it upon themselves to initiate and participate in their own peer-to-peer in-service activities in informal ways through social media and WhatsApp groups. As one teacher noted, ‘WhatsApp groups by teachers are very helpful. The EKB and Madrasatna are not as helpful as these groups’.

2. Researching Teacher Activities

We began this research knowing that a cross-section of primary school teachers from rural and urban communities in Egypt communicate on social media, though we did not have hard data on the precise percentages and locations (Herrera and Shama 2020). To identify TPD groups and

activities online, we started with some basic keyword searches on the platforms Facebook, Telegram, YouTube, TikTok, and Instagram such as, 'first grade teachers in Egypt', 'second grade teachers', etc. We were able to verify that primary school teachers were especially active on Facebook followed by YouTube, so we focused our efforts there. As we started observing teacher groups, we took note of the professional terminology they were using that related to the new education system, Teacher's Guides and teacher trainings. For instance, instead of talking about 'subjects' (*mawad*) they referred to 'windows' (*nawafidh*). The term 'multidisciplinary subjects' (*muta'adid al-ta'hasusat*) also frequently appeared. We then refined searches using this new terminology with words like 'grade one window for Arabic', 'grade four window for mathematics', and 'multidisciplinary teaching.'

We initially looked at the largest teacher Facebook groups with members in the hundreds of thousands such as the group, 'Ask Reda Yousef', which is specialized in Arabic grammar for primary school teachers and has over 500,000 members (see Fig. 28.1).



Fig. 28.1 Cover photo on the 'Ask Reda Yousef' Facebook page, 2024, <https://www.facebook.com/groups/1849634368617130>

We did not limit our selection to these large groups. We also included mid-level groups with 30,000 to 40,000 followers, and smaller groups with followers in the thousands, the main criteria for inclusion being they were active groups with regular posts and comments. We supplement online observations with interviews with teachers who led

their own PD groups. We contacted them directly through social media using purposeful sampling to ensure geographic and topic diversity, and prioritizing topics most relevant to the reform. Through a trusted contact of one of the authors who works as a public-school teacher trainer (Menna), we also reached out to seven teachers from Cairo, Gharbia, Giza, and Kafr Elshiekh (see Fig. 28.2).

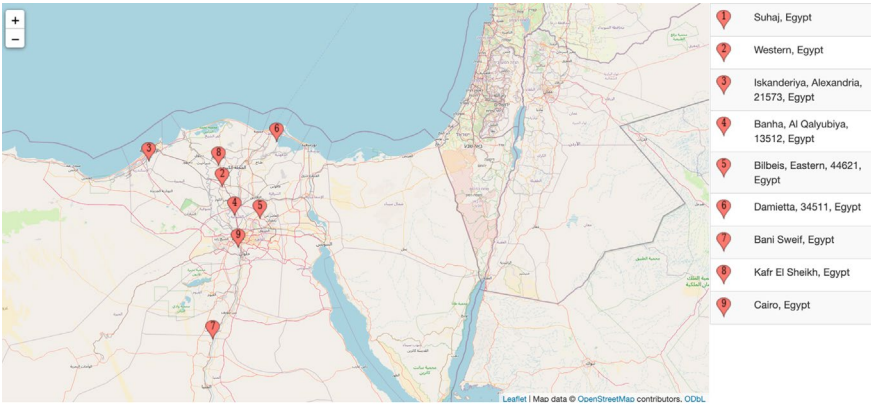


Fig. 28.2 Map of locations of teachers who participated in the study, created by Menna Ahmed Saieed, 2023.

Some of the interviews took place in-person, and others took place through calls. The questions focused on teachers’ opinions about the new reform, experience navigating the changes, if and how they used education technologies and platforms to enhance their teaching and/ or connect with their peers, and which platforms and applications they found most useful for their Professional Development.

In keeping with principles of research ethics when dealing with online research (Bouvier and Rasmussen 2022), we have been careful to protect the identities of teachers who make comments in the chats, though we do not anonymize teachers who promote their content for public distribution. Nevertheless, we are mindful to not identify teachers who might unwittingly incriminate themselves by, for example, sharing the answers to the Ministry’s teacher exams or promoting their private lesson businesses.

As this study is exploratory and qualitative, it has certain limitations. First, it does not provide statistical evidence, but analysis based on observations and study of twenty Facebook groups, sixteen YouTube

channels, and over fifty videos. Second, it only includes teachers who use social media and does not deal with in-person TPD activities. However, in-person and online TPD overlap as the two mutually influence each other. Third, like the rapidly changing technology ecosystem itself, TPD is dynamic and adapts as new technologies, applications, platforms, and ideas enter the education culture and environment. This research took place largely in 2022-2023 (though we reviewed social media sites going back to 2019) and covers the tools and styles teachers were using at that time. Fourth, this inquiry does not set out to understand the impact of teacher PD activities in the classroom or on student learning outcomes, however important these may be. Rather, the aim is to make visible some activities initiated by primary school teachers to understand ways TPD emerges organically in local communities and contexts through social media and how teachers help their peers understand the requirements and technologies of the new education system.

3. Learning through ‘How-to’ Videos

When the MOETE rolled out an entirely new curriculum in 2018 (initially for KG-Grade 2 and eventually up to Grade 6 in 2022), large numbers of primary school teachers and mothers of young students convened in social media groups to ask questions and provide guidance and advice to each other (see Chapter 25 in this volume). Teachers took on roles as group administrators to spread information they learned from their in-service trainings on the new concepts, pillars, subjects, and forms of student assessment. They were also interested in teacher incentives and operational matters. Group members used the comments sections to pose questions and share advice and information.

By the 2021/2022 school year, these exchanges continued, while another practice began to emerge; individual teachers started producing ‘how-to’ videos on their individual social media pages. These teacher creators usually used mobile phones to film themselves giving a presentation on a specific topic, concept, or lesson. ‘How-to’ videos branched off into different thematic directions. We focus here on three branches within this category: how to apply Education 2.0; how to apply Tokkatsu activities; and how to enhance digital skills.

3.1 How To Apply Education 2.0

The first wave of ‘how-to’ videos covered a range of topics from classroom management and concepts underpinning the Education 2.0 system, to how to deal with specific lessons. Teachers shared what they learned in their in-service trainings and in the Teacher’s Guide. These videos covered topics like the multidisciplinary approach, activity-based learning, the new assessment system, inclusive education, and learning loss during the pandemic. Some videos dealt with subject-specific skills development like ‘How-to teach Grade 4 Arabic according to the new curriculum’, or ‘Tips on teaching math for Grade 5’. Teachers intentionally used a simple and straightforward language to communicate with fellow teachers. Some of them addressed the environmental realities of their classrooms. For instance, many teachers offered strategies for teaching large class sizes in schools with limited resources. The most common topic among ‘how-to’ creators concerned how to use the Teacher’s Guide to meet the learning outcomes for each lesson in every grade. For example, the Arabic teacher Asmaa Sabry uses her personal Facebook page and YouTube channel to coach fellow teachers on how to use the Arabic Teacher’s Guide (see Fig. 23.3). She writes specifically in her channel description that this work is a form of service, or ‘charity’ to benefit knowledge.



Fig. 28.3 The cover image of Asmaa Sabry’s YouTube channel, 2025, <https://www.youtube.com/@asmaa-sabry/>

The next most popular video type is how to make a lesson plan. Teachers requested and shared their lesson plans in the hundreds on a range of topics and modules. These plans circulated on social media either as

PDF files of hand-written pages or as a series of screenshots (see Fig. 28.4). Judging by the effusive comments' section, teachers not only enormously appreciated these resources, but also used them as their own lesson plans.



Fig. 28.4 Arabic lesson plans for Grade 1, week three, prepared by a teacher named Maha Barakat and shared on a Facebook group, 2025, <https://www.facebook.com/photo/?fbid=2410125966056772&set=g.1849634368617130>

Videos about activity and play-based learning also trended among teachers who demonstrated ways to incorporate role-playing, performance and music, games, and movement, in the classroom. They often demonstrated with one or two students. Some of them spoke about the importance of making learning a form of 'edutainment'. Others kept these lessons more theoretical and less interactive, saying that they neither had the resources, space, nor time to organize their students into games and activities.

A subsection of videos in this category dealt with learning loss since the coronavirus pandemic and ways to support inclusive education. Teachers talked about students with special learning needs and highlighted extracurricular activities that parents and teachers might consider. Some

teachers referred to relevant sections of the Teacher's Guide. They generally talked in a positive tone about inclusive education, but in the comments section teachers often remarked that in reality, they neither had the time nor resources to provide individualized attention to their students

3.2 How to Apply Tokkatsu Activities

A number of Egyptian schools have incorporated the Japanese system of extracurricular activities called 'Tokkatsu'. While this began in 2016 through an educational partnership with Japan (see JICA 2023), it has gained momentum since the 2018 reforms.³ The MOETE has trained roughly 30,000 teachers on Tokkatsu using the cascade method, and asked teachers to continue to spread its principles through peer-to-peer learning. Teachers have showed especial interest in the Tokkatsu 'classroom council' facilitation, a system of student self-governance. Teacher trainers on Tokkatsu shared lesson plans about how to practice Tokkatsu activities in the classroom and used Facebook live videos for peer-to-peer training. They also posted recordings of in-school workshops on their social media for an online audience.

3.3 How to Enhance Digital Skills

From the inception of the Education 2.0 reform, the MOETE set out to train teachers on digital tools and platforms. It was not until the COVID-19 pandemic and the move to remote and blended learning in 2020, that teachers' digital competencies really spiked. The ministry envisioned that the EKB platform, with its Learning Management System (LMS) would provide a hub for a range of teacher activities

3 The seeds of the idea to introduce a Japanese style education to Egypt began in 2002 when Fayza Aboulnaga, the Minister of State of Foreign Affairs under President Hosni Mubarak, visited Japan and observed the children there. The Egypt-Japan Education Partnership (EJEP) was established fourteen years later in February 2016. As the Japanese International Cooperation Agency (JICA) reports, 'The concept of the partnership was to work together in introducing various facets of Japan's educational program into the Egyptian school system to strengthen the capacity of the nation's youth. ... Currently, two major projects are ongoing under this comprehensive partnership: the introduction of tokkatsu [...extracurricular activities] at Egypt-Japan School, or EJS; and the establishment and strengthening of the Egypt-Japan University of Science and Technology (E-JUST)'. As of 2023, nearly 20,000 students from K-12 and 3,500 students in higher education are exposed to a 'Japanese style' education (JICA 2023). See also Al-Shamaa 2021.

(see Chapter 4 in this volume). It provided virtual learning tools like Microsoft Teams, Zoom, Outlook, Edmodo, OneDrive, and Microsoft Learn. Teachers could enroll in different MOETE trainings on these services and access courses and learning materials. Yet based on teacher interviews and a review of comments on social media, the Ministry's EKB platform was not especially user-friendly, and there were too many options which made navigating it cumbersome. Many teachers preferred to participate in peer-to-peer Informal Professional Learning Communities (IPLCs) via Facebook groups and YouTube channels organized by their peers. Groups on social media were generally organized according to grade and subject with titles such as 'Forums' (*montada* or *moltaqa*), 'Studying Together', 'Teachers of Grade 4', and 'Grade 6 Together Group'. These specific titles made them easy to locate.

When the MOETE introduced a new mandatory platform for teachers' training and Professional Development tracking called Learning Curve in 2022 (its full name is Electronic Platform for Teachers' Training and Professional Development), many teachers found out about it via teacher-led social media groups and pages. There immediately emerged a plethora of informal online videos by teachers wanting to guide their peers on how to register and access the platform. Many also shared information on what to expect from the required teacher tests, and some even shared the answers to the tests. Teachers did not seem to view this as a form of 'cheating', but rather a form of peer support and solidarity, especially since teacher tests were connected to their salaries and promotions on the career ladder. These videos were enormously popular and much appreciated by teachers who left grateful comments.

Another observable practice was how teachers moved between in-person and online PD, and the blurring between online and in-person trainings. For instance, teachers in PD groups would meet online synchronously using Zoom, Microsoft Teams, and Facebook Live and record and post their meetings on Facebook pages and YouTube Channels. These recordings would be shared on WhatsApp groups, Telegram channels, or played in a space where teachers congregated in-person in PD workshops or meetings. There was not a clear line between online versus in-person PD activities since they mutually influenced each other.

4. Communication Styles

Primary teachers congregated and formed informal virtual peer-to-peer communities on social media spaces. They produced, engaged in, and spread DIY videos. Their online spaces were for the most part supportive, friendly, and appreciative. In the comments section of their Facebook live and YouTube videos, viewers often expressed appreciation and shared stories about how these videos helped them with comments like, ‘so helpful’, ‘great point’, ‘I tried that in my class, and it really worked’. They might also ask for additional videos about specific things like lesson plans.⁴ To recognize the efforts of participants, some admins would present them with a certificate.

These social media spaces also revealed differences in teachers’ presentation skills and degrees to which they were comfortable with different applications. For instance, some teachers depended on more rudimentary visual aids like handwritten sheets or pages, while others experimented more with simple graphics as in the example of a teacher giving a lesson on the letter ‘seen’ using Facebook Reels (see Fig. 28.5).

Teachers in the upper years of primary (Grades 4-6) often posted more well-produced videos that used advanced graphics, animations, interactive books, and sound effects. These tended to be directed towards students rather than fellow teachers, and in some cases appeared to serve as a kind of enticement to bring students to that teachers’ tutoring services.

5. Learning from Teachers: Some Key Takeaways

Since the start of the Education 2.0 reforms in 2018, ‘how-to’ videos and teacher-lead DIY professional learning community activities have proliferated across social media platforms, and they continue to develop. These videos represent an organic window into teacher practices, artistic and communication styles, and perhaps most importantly, their priorities.

4 This positive atmosphere among primary school teachers stood in contrast to large Facebook groups directed towards high school teachers and parents who express frustration and anxiety about the high-stakes Thanaweya Amma exam (the combined high school leaving-university entrance exam in Grade 12). This exam which hovers like a dark cloud over high school is intricately linked to an expansive and unregulated private lesson market, which places a huge financial and psychological burden on students and their families (Herrera 2023: 193-196).



Fig. 28.5 Teacher Radwa Hassan explaining the letter 'seen' on Facebook Live, 18 January 2023, <https://www.facebook.com/reel/204769658797315>

Many primary teachers, especially those teaching in the early years of KG to Grade 3, have taken to social media to share information, ask questions, provide peer-to-peer support, and engage in informal PD activities. Through social media spaces, teachers have been assuming leadership roles, enhancing their digital skills, practicing creativity and autonomy, and providing each other the freedom to ask questions. Their activities and behaviors online have spilled into in-person activities.

The informal PD activities led by teachers differ from the formal initiatives of the Ministry of Education which tend to be top down and inattentive to material realities on the ground. For example, the Teacher's Guides provide useful details about specific lessons and learning outcomes, but do not sufficiently address the actual conditions and social realities of working in public sector schools. It can be challenging for teachers to apply the prescribed classroom activities when faced with large class sizes, lack of resources, and high numbers of students with special needs. The YouTube channel Madrasatna provides videos of 'model lessons' for teachers, but do not allow comments and teacher feedback.

As the Ministry and its partners engage more in PD programs, whether as in-service or pre-service trainings, they should be mindful of the real-life environments and settings in which teachers and students learn, live, and work. They have much to learn from the IPLCs on social media which operate in nimble ways, with a continuous feedback

loop. The formal programs and Ministry-sponsored platforms can build on teachers' communication and artistic styles, online behaviors and practices, and self-identified areas for PD and growth. Through understanding, taking cues from, and engaging teachers' informal professional cultures, more systematic formal programs can be developed where teachers and their students could have the chance to thrive.

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29. A New Curriculum and a Pandemic: Primary Teachers' Strategies

Nevine El Souefi

Abstract

Primary school teachers are at the frontlines of the Education 2.0 reforms. They are called to pivot from traditional classroom teaching to a more child-centered and activities-based pedagogy even though material conditions in their schools, with overcrowded classrooms, insufficient resources, and ageing infrastructures, remain the same. However, one difference compared to the past is that teachers can access new digital resources and consult the new comprehensive Teacher's Guides about the new system. As teachers were adjusting to the reforms, the COVID-19 pandemic broke out and teaching and learning went online. Through interviews with two primary school teachers from an urban and rural school, this chapter explores how teachers coped with the pandemic, where they turned for help, and how they navigated a system which offered them technical solutions but lacked the kinds of professional support and training they needed to ensure the well-being and positive learning outcomes of their students.

Keywords

COVID-19, Education 2.0, learning loss, student centered-learning, teacher autonomy, Teacher's Guide

1. Primary Teachers in the New Education System

Egypt's reform for a 'new education system' or Education 2.0, began in 2018 and started with kindergarten to Grade 2. The reform placed a heavy demand on teachers. It set out to change the pedagogy of teachers by replacing rote learning methods associated with the old system, with a dynamic multidisciplinary curriculum with project-based student centered-learning. These changes were supposed to lead to better student outcomes in literacy and numeracy. While the student books and educational vision were new for Egypt, teachers' circumstances and material realities on the ground remained practically the same. They continued to face constraints around space because of overcrowded classes and schools, insufficient resources, and inadequate training, to name a few issues. In addition, teachers were just starting to grapple with the new 2.0 curriculum when the COVID-19 pandemic hit resulting in schools closing in March 2020. Teachers were largely left to figure things out on their own, which resulted in some of them falling through the cracks.

Overall, teachers lacked direction on how to deal with 'learning loss', a term 'commonly used to describe declines in student knowledge and skills (UNICEF 2022). These losses may translate to greater long-term impacts' (World Bank 2022: 2). According to Kaffenberger (2021), after three months of school closures students can experience learning loss of more than one year because they fall further behind when schools reopen.

As much as this situation was challenging, it also served as a kind of opportunity for some teachers to think outside the box and find solutions. Linda Finlay, a psychologist of education, argues that teachers in critical situations find solutions for unexpected problems and learn from those instances. She notes 'Professional practice is complex, unpredictable and messy. In order to cope, teachers think on their feet and improvise. They act both intuitively and creatively' (2008: 3).

2. Two Teachers

This study is based on a series of interviews about Education 2.0 with two teachers, Ms. Fatema and Ms. Hend (pseudonyms). They both teach in the lower primary grades (first to third grades) and were introduced to

the new Education 2.0 curriculum when it was rolled out in 2018. They specialize in different subjects, Arabic and Math respectively, work in different locations (urban and rural), and are from different age groups or generations (fifties and twenties). Ms. Fatema was born in 1969 in Tanta, Egypt, and holds a teaching diploma from a Teachers' Institute in Gharbia governorate located in the north of Egypt, ninety kilometers north of Cairo. She has been teaching the Arabic language in Cairo for roughly thirty years. She has witnessed her share of reform initiatives and has her own perspective on each one of them. She has remained passionate about her profession, her students, and her country, and is known for being exceptionally skillful at making the most out of minimal resources. She has been ascending the Ministry's promotion and career ladder and reached the position of supervisor of the lower grades in her school. She was also a trainer with the Ministry of Education and Technical Education (MOETE) in her district.

Ms. Fatema was proud of her decision to remain in Egypt when so many of her colleagues and relatives went to work in the oil rich Arab Gulf countries. When her cousin who worked in Qatar showed her photos of impressive well-resourced classrooms and staffrooms, she joked with her saying, 'I swear to God ... even if we only have a tree to sit under, we will stay in Egypt to teach our kids'. Her husband on the other hand, benefitted from work in the Gulf. As their financial situation improved, he asked her to stop working but she refused. But she was careful not to let her work as a teacher interfere with her family life. She said, 'Once I leave the school that part of my work is done. When I am back home, I have another type of work'. She did not want to be a full-time homemaker because staying at home would have only benefitted her family, whereas she also wanted to be useful to society.

The school where Ms. Fatema works is located on a wide unpaved street. The first thing one sees after entering the large door, is a concrete playground covered with sand and surrounded by high white walls. In her classroom on the second floor, the walls are covered with colorful pages from her students' drawing book. Some are designs of 3D shapes related to different units in the curriculum like habitats, houses, and Egyptian monuments. Ms. Fatema is very proud of her students' work and keeps the best ones hidden behind a large chart on the wall,

protected so that she can submit them for a competition with other schools in her district.

After three decades as a classroom teacher, Ms. Fatema complains that she still does not have an assistant. She said,

I am an expert teacher. They give me different responsibilities and loads of work. They want me to teach and make new lesson plans, and yet I still don't have an assistant!

The new curriculum added a heavy load to her already many responsibilities. Still, she regards teaching as her vocation.

The profession of teaching is a mission. You feel that you are useful in the society. I love teaching. Seriously, I would like to die while I am teaching.

The other teacher Hend is twenty-seven years old and lives in the city of Fayoum, located about seventy kilometers southwest of Cairo beside Lake Qaroun. The city is surrounded by agricultural areas and villages. She graduated from the Faculty of Arts but for the past five years has been teaching Math for the lower primary Grades 1-3 in a rural government school two hours away from her home.

Hend loves the teaching profession and considers it to be highly respectable work, though she wishes teachers were more appreciated and valued, especially by the Ministry of Education. She lamented,

We are the most important professional category in the country, and yet we are treated the worst, even from the ministry which is supposed to be our voice.

Ms. Hend pointed out how her students in the village were different from students in the city. The poverty and illiteracy of parents in the village put more demands on her work as a teacher. She asked,

What can I do with students who do not have the schoolbooks because their parents were not able to pay the school fees? How can students do their work when parents are illiterate? That of course affects the student.

Ms. Hend has two sons of four and seven years old and has high ambitions for them. She dedicates time in the evenings to following up with them on their studies. Although she has had offers to work in private schools, she prefers working in the public sector because she can maintain a better work-life balance and has a clear path of career

advancement, though the salary is lower. To be sure, the two-hour commute to and from the village takes its toll. She explained,

The public sector has a lot of benefits. There is a specific time to start work, and a specific time to leave. The holidays are more comfortable than private schools, and our maternity leave is four months with pay. I really have many privileges.

Although Ms. Hend values her profession, she sometimes feels exhausted by its requirements. She says, ‘Sometimes I feel that all the effort is worth it and sometimes I think, “What am I doing to myself?”’

3. Teaching a New Curriculum

In 2018, the word coming from the Ministry of Education and Technical Education (MOETE) was that this reform constituted an entirely ‘new system’, and a ‘transformation’ (Shawki 2019). The curriculum reform was highly ambitious and in principle many teachers probably welcomed the change. But ‘new system’ and ‘transformation’ seemed to be hyperboles. Rather, it represented a modification of the old system by incorporating contemporary teaching and learning approaches, with some changes in teacher pedagogy and classroom practices. Ms. Hend and Ms. Fatema had different opinions about the new curriculum.

Ms. Hend had little familiarity with different curriculums and said, ‘I feel that the curriculum is too long and too advanced for the child’s age’. Ms. Fatema, on the other hand, a more seasoned teacher, expressed her opinion about the curriculum saying, ‘The curriculum is smooth and progressive. It is good to take the student gradually into reading and writing’. Both teachers agreed that there was not enough class time allocated for the curriculum. Ms. Hend grumbled, ‘We are really frustrated that we have to teach a big curriculum in a short time’. Ms. Fatema protested, ‘We want to teach it all, but time... the time constraints are annoying’.

Time constraints were not the only obstacles for them. They both had to teach the new curriculum with all its advanced approaches and expectations in difficult working conditions. Class density and overcrowding stood as a major barrier. In 2020, the average class size in Egypt in the lower primary stage was 56.9 students per classroom

(MOETE 2019/20). Ms. Fatema's class had seventy students, but she knew of teachers with class sizes upwards of one hundred students. She complained,

You are giving me that big curriculum, a short time to teach it, and then you give me one hundred students in a class. What do you want from me? This is a crisis. We will not be able to do anything with those students.

Ms. Hend said with distress, 'I feel guilty because I cannot address everyone's needs with so many students in the class'.

When the MOETE authorized Discovery Education (DE) to start training teachers using the cascade model on the new curriculum in August 2018, they initially trained 2,000 'master trainers'. These trainers went to different governorates to train local teachers. By November 2018, less than two months after the start of the academic year, Minister Tarek Shawki stated that the Ministry had trained roughly 130,000 primary teachers on the new curriculum, or 8% of all public sector teachers (Masrawy 2018, State Information Service 2018).

Ms. Fatema was selected as one of the original master trainers. She conducted trainings in local districts. Some of the trainees were frustrated and complained that the new system was too theoretical and not practical enough. She herself agreed that the training materials about teacher strategies were too detached from teachers' contexts. Ms. Fatema took the initiative to make the training more relevant to teachers by building on their personal experiences. She started by recognizing and validating teachers' lived experiences in the classroom and incorporated those experiences into the training. She explained,

I organized the sessions like a workshop. I asked each teacher to choose a lesson and share their ideas of how to deliver the lessons keeping in mind the conditions of their classroom. Then we discussed their ideas together. We used to come up with very good ideas. Teachers who initially resented being forced to attend the training, became more involved.

Due to Ms. Fatema's long experience in teaching, she had the confidence and understanding that incorporating teachers' perspectives and lived experiences would allow them to better work together to solve problems. She was adamant that 'Some old ideas should not be forgotten', even when they are not consciously part of a 'new' system. She always stressed

to teachers that they should hold onto old strategies in the classroom if they still worked well.

Ms. Hend on the other hand, felt somewhat abandoned and left to figure out the new curriculum and pedagogic strategies on her own. She expected more support from the Ministry's local education authority, the Idara. The Idara supervisors are supposed to monitor and provide continuous technical support for their local teachers.¹ While the initial training provided a general orientation, it did not prepare Ms. Hend for the new requirements put on math teachers. She was stressed when she found out about the extra work expected of her. She was supposed to produce teaching aids like charts and cards to clarify mathematical concepts and math manipulatives, but her school did not provide any resources. She explained,

1 According to Prime Minister's decision No. 428 (2013), the executive regulations for Chapter VII of the Education Law, Articles 8 and 16 identify the job description of the Idara supervisor as follows:

'Article (8):

The workloads for the occupants of directing positions shall be as follows:

- (a) Preparing the general plan for guidance in the specialty subject and the accompanying activity and following up on its implementation.
- (B) Determining the position of the subject or activity in terms of the deficit and the increase in the schools that fall within the scope of the mentor's competence and the ways to treat them.
- (C) Develop a field plan to visit the schools within the scope of the competence of the guide to determine the academic level of the students and the extent of implementation of the educational activities accompanying the specialization.
- (D) Follow up the teacher's teaching performance, evaluate his performance, and provide all kinds of assistance and technical support that each teacher needs.
- (e) Preparing training programs at the local level to advance the subject of specialization to activate teachers and inform them of the latest developments in the field of specialization, and to suggest the necessary means to achieve a distinguished level of professional development for teachers.
- (f) Providing the Professional Academy for Teachers (PAT) with the training needs of teachers in the field of specialization.
- (g) Participation in preparing exam questions for the specialty subject, supervising transfer exams, and estimating grades.
- (h) Reviewing samples of students' answer sheets in public examinations at the governorate level, with the aim of raising the level of students' performance and providing educational evaluation methods for examinations.
- (i) Expressing opinion on appropriate books for school libraries and summer reading, and references that can be used in serving the curriculum and training programs.
- (j) Submit proposals and prepare studies and research for the development of the material or activity'.

They asked us to prepare a lot of teaching aids, but they did not have any funding for them. Still, they said we had to have them.

As a solution, teachers in Ms. Hend's school found ways to support each other. They made and shared manipulatives and cards with each other, lessening each other's burdens.

Even though in the new system the supervisors were supposed to be supportive and act as mentors, Ms. Hend found her Idara supervisors more punitive than supportive. She said,

The supervisors checked our work against a checklist of certain requirements. They were very strict. If we did not produce the teaching aids on the list, we would get a penalty.

She expected some direction or encouragement, but they only ticked items off their lists. When she asked them for support and ways she could apply the new curriculum, their answers would be something along the lines of, 'Just do it. We do not know how'. She resented how the Idara supervisors did not acknowledge her efforts but were only interested in their bureaucratic duties and papers.

Ms. Fatema and Ms. Hend witnessed a lot of people criticizing the curriculum reform, especially on social media groups. From Ms. Fatema's point of view, this was because they did not understand it. She says, 'Some people do not want anything that is new'. She felt that she had an obligation, a mission, to explain the new curriculum to other teachers and parents. She spent time on Facebook in some of the large groups to answer posts. In one post where a mother did not understand the approach to Arabic and writing, she wrote,

So, your son is in Grade 2. What will happen is that his teacher will guide him so that by the end of the year he will be able to write a small article, like adults. This is an accomplishment.

She encouraged her other colleagues to communicate with parents and explain the changes. She offered to hold a workshop for parents on the new curriculum, but they preferred coming to her individually to ask her specific questions to help their child.

Ms. Fatema and Ms. Hend both stressed the value of positive reinforcement over punitive behavior. For example, Ms. Fatema had a very bright student who was not able to read at all. The girl made excuses

to leave the classroom when reading started. Ms. Fatema called her mother to see where the problem came from. The girl's parents were on the verge of divorce and in hard financial circumstances. She gave the girl extra attention in class and asked the class to clap for her when she read something correctly. She even got her a small gift for making good progress because, 'students need to love the curriculum and love learning'.

3.1 Working with the Teacher's Guide

The Center for Curriculum and Instructional Materials Development (CCIMD), issued a Teacher's Guide's for each subject with details on how to teach each individual class. For Ms. Hend, the notion of a Teacher's Guide was completely new. It took her time to understand its contents and how to use it. When she started really consulting the Guide she came to see it as a savior, giving her ideas for activities with step-by-step instructions of what to do.

Ms. Fatema found the Teacher's Guide to be a highly valuable part of the new materials. The Guide gave her creative ideas to help her change what she knew to be rigid style of classroom teaching. She learned, for example, ways to teaching spelling in more interesting ways. She said, 'The explanations in the Teacher's Guide of how to approach spelling are fantastic, I like them very much'.

Ms. Fatema used strategies in the Teacher's Guide's for dealing with large classes. One technique called, 'think – pair – share' is when the teacher asks a question and lets the students first think about it alone. Then, they share it with the person sitting next to them. This way, even in big classes, all students have a chance to share and discuss ideas.

The Teacher's Guide also introduced the concept of formative assessments which measures student progress to ensure *that* they are learning, rather than *what* they have learned. This approach is practiced widely, but it was new to Egyptian teachers. Ms. Fatema created her own formative assessments. She explained:

I give students a quiz that I make myself to see if my teaching was effective. This helps me to know where I stand and decide what I will do next. This is not part of the curriculum, it is my own initiative. I got this idea from the Teacher's Guide.

The Teacher's Guide was available online and many teachers downloaded the digital version on their mobile phones so that it would be with them all the time. But teachers preferred by far to have a hard copy, although these were in short supply. Ms. Fatema said, 'When we find a hard copy it is like a treasure'.

4. Learning Loss during the Pandemic

Teachers were just starting to understand the new curriculum requirements when the COVID-19 pandemic led to schools closing in March 2020. In the following academic years of 2020-2021 and 2021-2022, schools opened intermittently and then closed again. This meant that two of the first three years of implementing the new curriculum happened during the pandemic. Students in the early years were especially affected with learning loss (UNESCO et al. 2021).

During periods of school closures, most students in Grades 1 to 3 lacked access to their schoolteachers. Ms. Fatema found it difficult to initially adapt to online learning and said,

When students were staying at home there was no teaching at all. It was very difficult. I don't know anyone in the younger grades who did online learning.

Out of necessity, parents and students were accepting the idea of online learning. Ms. Fatema learned that many parents from her school were resorting to private lessons online for a fee. In principle, she was against private lessons in the early grades. She thought private lessons were only beneficial when there was an actual problem, and she had to admit the coronavirus presented a problem.

As for Ms. Hend, the village where her school was located did not have electricity. This meant the school could not use the Internet or mobile phones to communicate with parents and students. They were resigned to the idea that there was no way to teach students remotely. They had to wait for the pandemic to end. Ms. Hend believed that private lessons were the only way students could catch up with what they missed. As a mother of a child in Grade 1, she saw firsthand how her son was slowly forgetting everything he had learned in school.

In October 2021 schools opened and students returned to schools after missing more than a full year of instruction. The learning loss after the pandemic disrupted the building block nature of the curriculum. For example, students who missed basic reading skills in Grade 1 could not meet expectations for reading skills in Grade 2. Ms. Fatema's students entered Grade 2 missing basic reading skills. They did not know most of the letters and could not blend letters and words, things they were supposed to cover in Grade 1. Ms. Hend encountered a similar problem with Grade 3 Math. Her students were lacking basic addition and subtraction skills. They were not ready for multiplication, which set back the whole curriculum.

Teachers were not given clear direction regarding what to do, which put them under real pressure. They had to be resourceful and creative to develop their own solutions. Ms. Fatema explained,

Corona, frankly, nearly destroyed us all. Students came back not knowing anything. They seriously exhausted us. I mean, we didn't know what to do with them.

Without direction from the Idara supervisors or anyone from the Ministry, Ms. Fatema, drew on her experience to improvise. Like other teachers around the country, she arrived at the solution of creating WhatsApp groups with the parents. She explained, 'When students returned after Corona, we teachers thought, "How can we work with them?" That is when we started asking parents to use WhatsApp'. Getting everyone onto the App took a number of steps. First, she had to get the permission of her school principal. Second, she had to contact the parents of each class, and they had to agree to join a WhatsApp group for their child's class. Once the group was formed, she shared all the work the students covered that day. She explained, 'I sent photos of everything I wrote on the board and also sent voice messages'. The parents—usually the mothers—were expected to follow-up with their child at home. When students came to school, the next day, she would review the previous day's lesson to make sure they grasped it before moving on. She proudly said, 'Yes of course we can help each other'. These solutions were the best teachers found at the time, but they placed more work and burden on teachers and parents. They only had success

in households where someone in the family had the time or capacity to follow up with their student.

The village environment where Ms. Hend worked called for different solutions. Forming WhatsApp groups with parents was not an option because many of them were illiterate and not tied to their mobile phones in the same way. Initially, she started the new year by devoting one week to reviewing the concepts needed to start the new curriculum. One week was not enough to cover everything, so she had to manage revisions while teaching the year's curriculum. She tried to organize extra courses after school for students, but the school already suffered from teacher shortages and the ones working did not have time. Instead, teachers decided to provide remedial lessons during the mid-year break, but students did not want to attend them because that was their break. They tried to contact parents to convince them to send their children during the break, but they did not respond. She expressed frustration that despite many efforts and good intentions, nothing seemed to be working. Reflecting back on that time she said,

It was very difficult for all of us. Our school in the village had a lot of challenges from parents' illiteracy, their hard economic situation, and our lack of resources. Sadly, a percentage of the students will get lost in the crowd.

5. Personal Initiatives and Tech Can Go Only So Far

Through extensive interviews about the Education 2.0 curriculum reform with two primary school teachers, this chapter explores how educators navigated both a planned change and an unexpected global pandemic. Ms. Fatema and Ms. Hend differed insofar as they were on different parts of the career ladder in terms of seniority, they taught different subjects (Arabic and Math) and worked in an urban and rural school respectively. While these teachers welcomed the ambitious curriculum reform in principle, they received only minimal support to implement it. Rather, the Ministry of Education invested heavily on short trainings and digital solutions. They did not sufficiently take into consideration the average school's material conditions, and teachers' capacity and abilities to apply contemporary and child-centered approaches in the

classroom. The Teacher's Guide offered grounded solutions and served as a valuable aid.

When schools closed as the result of the pandemic, the more senior teacher Ms. Fatema stepped up to find creative solutions to help her colleagues, students, and parents. She enjoyed the bout of professional autonomy that came with the pandemic. The more junior Ms. Hend did the best she could but was demoralized by the hard circumstances in her rural community and was not able to galvanize her colleagues, parents, or students to come together to find workable solutions. Both teachers believed in what they were doing but needed more recognition and support to face the challenges on the ground. While there is much to learn from these two committed teachers, their personal initiatives could take them only so far in a system where they were often left to fend for themselves. The system offered them technical solutions but not the kinds of robust professional support and trainings they needed to ensure high levels of student learning and well-being.

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About the Team

Alessandra Tosi was the managing editor for this book.

Adèle Kreager proof-read indexed this manuscript. Annie Hine compiled the index.

Jeevanjot Kaur Nagpal designed the cover. The cover was produced in InDesign using the Fontin font.

Annie Hine typeset the book in InDesign. The main text font is Tex Gyre Pagella and the heading font is Californian FB.

Jeremy Bowman produced the PDF, paperback, and hardback editions and created the EPUB.

The conversion to the PDF and HTML editions was performed with open-source software and other tools freely available on our GitHub page at <https://github.com/OpenBookPublishers>.

Hannah Shakespeare was in charge of marketing.

This book was peer-reviewed by Prof Mark B. Ginsburg, University of Maryland-College Park.

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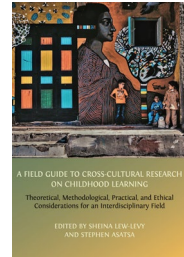
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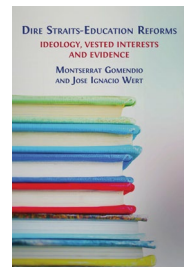
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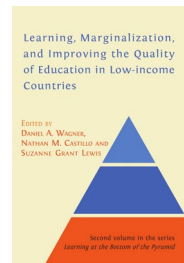
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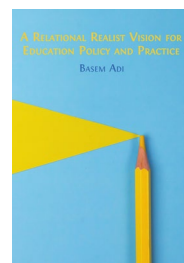
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